

Abolition of the death penalty

An event history analysis of the political, cultural and socio-economic determinants of death penalty abolition

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Abstract

During the past 50 years, more and more countries have abolished the death penalty. Today, more than half of the countries of the world have removed capital punishment from their laws for crimes such as murder. The use of the death penalty is highly controversial, and regularly creates political tension between countries with differing perspectives on the issue. Nevertheless, very little research has been devoted to studying the determinants of death penalty abolition. This thesis is intended as one step towards filling that gap, and studies the political, cultural and socio-economic determinants of abolition of the death penalty.

A range of political, cultural and socio-economic factors that are hypothesised to influence the likelihood of abolition are presented. The hypotheses are tested empirically on 145 countries observed in from 1960 to 2004. Event history analysis, more specifically a semi-parametric Cox proportional hazards model, is employed. Event history analysis is ideally suited for this research question, as it models *both* the duration until abolition *and* the occurrence or non-occurrence of abolition, under the assumption that countries with a higher likelihood of abolition will do away with capital punishment quicker than countries with a lower likelihood. The results show that political factors, including level of democracy, democratic transitions, the political orientation of the executive, experience with war, and abolitionist pressure, are more important in determining abolition than cultural and socio-economic factors. This conclusion is supported by previous research. However, the analysis also introduces variables that previously have not been included in analyses of abolition, and operationalises variables in new ways. This brings several new and very interesting findings to the study of death penalty abolition. For instance, the results indicate that abolitionist pressure may be successfully applied through international economic relations, and not just the political and regional channels that have previously been explored.

Furthermore, abolition of the death penalty is operationalised in two different manners in this analysis, as *abolition for all crimes* or as *abolition for ordinary crimes*, which mainly involves that countries may retain the death penalty for war-time crimes. The results indicate that the distinction between the two forms of abolition is not irrelevant, as several of the independent variables influence the two differently.

Preface

This thesis was motivated by a genuine interest in issues related to capital punishment. This interest first took an academic turn when I analysed the presence and absence of the death penalty in my bachelor's thesis. Since then, the project has gotten a bit more complicated. I must admit that I sometimes have wished I had chosen a methodology I had some prior knowledge about. But, although trying to learn the ins and outs of event history analysis has been quite a challenge, it has been extremely rewarding and actually quite fun.

I owe my thanks to a lot of people who have helped me along the way. Gunnar Grendstad has been an excellent supervisor. I would also like to thank the Methods group at the Institute of Comparative Politics for their very useful comments on the analysis. NSD have been very understanding in giving me time off to finish the thesis. NSD, along with the Methods group, also helped finance a statistics course at Essex Summer School last summer. Although I ended up not using logistic regression after all, the course was very useful, among other things because it introduced me to STATA. I am very grateful for the support.

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1. Introduction

The death penalty has been a recognised weapon of social control throughout large parts of human history. The modern movement to abolish the death penalty has its roots in the 18th century, but it is only in the past few decades that the abolitionist ideas have gained momentum. Fifty years ago, abolitionist countries still only made up a small share of the countries of the world. Since then, more and more countries have moved away from the use of capital punishment (Hood and Hoyle 2008). The spread of abolitionism reached an especially great pace in the past twenty years. By the end of 2007, 101 countries, that is, more than half of the countries of the world, had chosen to do away with this form of punishment,¹ whereas 94 countries still have capital punishment on their statute books. So why do some countries abolish the death penalty, while others retain it? What distinguishes these countries from each other? This thesis aims to answer these questions. More specifically, the research question asks: *What are the political, cultural and socio-economic determinants of death penalty abolition?*

Studying the determinants of death penalty abolition is vital for a better understanding of a highly controversial issue. Use of capital punishment has grown into one of the most divisive issues of international human rights debate. Whereas retentionists tend to see the death penalty as merely one aspect of national punitive policy, abolitionists frequently argue that, as a human rights violation, capital punishment can and should be regulated by international law. As a consequence, the question of the death penalty and its abolition is high on the international political agenda. The Council of Europe and the European Union (EU) have made abolition a precondition of membership. Furthermore, serious political tensions may be brought about by the execution of foreigners who are citizens of abolitionist countries (Neumayer 2008b). EU members, as well as other abolitionist countries, routinely intervene if one of their nationals is facing the death penalty in another country. Moreover, EU members and other Western countries do not extradite prisoners, own citizens or not, to a country where they may face the death penalty, unless given a guarantee that they will not be executed. This is the case even for suspected or convicted terrorists (Hood and Hoyle 2008).

¹ This refers to the number of countries that had abolished the death penalty for ordinary crimes by the end of 2007 (Hood and Hoyle 2008).

1.1. Previous research

The prominence of the issue of capital punishment in both international and national debate means that countries that retain the death penalty do so as a conscious choice. This makes it particularly interesting to explore what makes some countries choose to abolish, while others opt to retain it (Greenberg and West 2008). However, despite the controversy surrounding capital punishment, there is a surprising lack of research that seeks to explain abolition. This lack of research stands in stark contrast to the existing literature on other aspects of capital punishment, like racial discrimination in death penalty cases,² its deterrent effect,³ and public opinion on capital punishment.⁴

The main contribution to the quantitative investigation of the determinants of death penalty abolition has come from Neumayer (2008b). He uses event history analysis, and is thus able to explicitly test hypotheses about the determinants of abolition of the death penalty.

Neumayer (2008b) concludes that the most important determinants of abolition are political, and that the effects of cultural, social and economic determinants are only partially supported by his analysis.⁵ A few other researchers have studied the presence and absence of capital punishment cross-nationally, including the criminologists Killias (1998) and Ruddell and Urbina (2004), and the sociologists Greenberg and West (2008) and Neapolitan (2001). At the sub-national level, two other sociologists, Jacobs and Carmichael (2002), study the determinants of whether or not capital punishment is present in the laws of US states.

1.2. Why is further research on abolition needed?

All of the above-mentioned studies (with the exception of Neumayer (2008b)) use models based on a dichotomous dependent variable to distinguish between abolitionist and retentionist countries, for instance through logistic regression. These studies are certainly very relevant and useful for anyone studying capital punishment and its abolition, and I will refer to their results throughout the thesis. However, their methodology is of such a nature that they

² See for instance Baldus, Woodworth, Zuckerman, Weiner and Broffitt (1998), Eberhardt, Davies, Purdie-Vaughns, and Johnson (2006) or Bright (2002).

³ Donohue and Wolfers (2005) give an overview of research done on the deterrent effect of the death penalty in the US. Or see Katz, Levitt, and Shustorovich (2003) or Dezhbakhsh, Rubin, and Shepherd (2003).

⁴ See for instance Peffley and Hurwitz (2007) or Whitman (2001). It should be noted that the vast majority of research related to the death penalty is based on its use in the United States.

⁵ Neumayer (2008a) has also published an event history analysis of the determinants of ratification of the *Second Optional Protocol to the International Covenant on Civil and Political Rights* (the Protocol abolishes the death penalty in peacetime).

do not allow for inferences about the determinants of *abolition* per se. The independent variables in these cross-sectional studies are observed at one point in time, and this point will in most cases not coincide with the time of abolition. Since many factors that can be expected to influence abolition, like level of democracy, vary over time, their values at the time of observation may be very different from what they were at the time of abolition. Thus, these studies can investigate what factors distinguish countries that have abolished the death penalty from those that have not, but they are not suitable for studying the determinants of the act of abolition.

As mentioned, the only researcher who, to my knowledge, has presented a quantitative analysis of abolition is Neumayer (2008b). He presents some very interesting results, which the analysis of this thesis will be able to retest. Although the analysis that will be presented in this thesis is very similar to that of Neumayer (2008b), it represents an expansion rather than a repetition of his research. Other sources for data are used. Independent variables are included that have not been included in analyses of death penalty abolition before. Furthermore, some variables are operationalised in new ways. These innovations lead to several new and very interesting conclusions about the determinants of death penalty abolition.

Thus, this thesis will provide further knowledge in a field of study that is still relatively unexplored, allowing both the retesting of previous findings and the examination of relationships that have yet to be investigated. This is not only of interest on a purely academic level, it is also highly relevant for the many organisations and individuals that actively work for or against abolition. Both politicians and activists, whether they advocate abolition or retention, may find it useful to know which factors influence the likelihood of abolition, in order to better direct their energies where they will be most effective.

1.3. *Determinants of death penalty abolition*

The decision whether to abolish or retain the death penalty is a political decision, and the existing literature presents a range of political factors that are expected to influence the likelihood of abolition.⁶ A higher level of democracy, a democratic transition, a left-wing executive, and a greater number of years having passed since the country was involved in an armed conflict are all expected to raise the likelihood of a country abolishing the death

⁶ See Chapter three for references for the hypotheses presented in this section.

penalty. In addition to these domestic features, retentionist countries may be subject to pressure to abolish. Countries may be exposed to such pressure through membership in the Council of Europe, or from abolitionist regional peers. Greater exposure to abolitionist pressure is expected to raise the likelihood of abolition.

However, decision makers are influenced by other aspects of the society they live in than the purely political. The same is true for the general public, to which the decision makers have to relate. Cultural factors may influence policy decisions, such as the decision whether or not to abolish the death penalty, because culture provides values that may shape policies. One important part of a country's culture is its religion. Although religiously justified arguments have been put forth in the international abolition debate based in many religions, only Islam has been used consistently in this manner. A higher percentage of Muslims in the population is tentatively expected to lower the likelihood of death penalty abolition. The second cultural factor that is believed to influence abolition is a country's legal system, where a system based on English common law is expected to lower the likelihood of abolition.

The third group of hypothesised relationships reflects the effects of socio-economic factors on abolition. Higher levels of development (economic or more general human development) are expected to increase the likelihood of abolition. Furthermore, international economic relations are believed to serve as a venue for potential abolitionist pressure, so that greater integration in the world economy, in the form of greater dependence on international trade, is expected to raise the likelihood of abolition. Lastly, any one of several sources of social threat, including higher levels of economic inequality and ethnolinguistic and religious fractionalisation, is expected to lower the likelihood of abolition.

1.4. How to study the determinants of abolition

The hypothesised relationships between the independent variables and abolition of the death penalty will be tested by event history analysis, more specifically through a series of Cox proportional hazards models. Event history analysis is ideally suited for the purposes of this thesis. It models *both* the duration until abolition of the death penalty *and* the occurrence or non-occurrence of abolition, under the assumption that countries with a higher likelihood of abolition will do away with capital punishment quicker than countries with a lower likelihood. The results of the analysis will reveal how the independent variables influence the likelihood of abolition. Event history analysis therefore allows for studying the determinants of abolition

per se. As already mentioned, this represents an improvement over the bulk of previous research, whose cross-sectional models are only able to distinguish abolitionist from retentionist countries.

The analysis in this study is based on two datasets that cover the period from 1960 to 2004. These are compiled from data from a wide range of sources. The first dataset includes a total of 4931 country-years, representing 145 countries, of which 49 abolish the death penalty during the observation period. The second covers 4391 country-years and 134 countries, 49 of which experience abolition. The reason for using two different datasets and therefore two different samples is that abolition of the death penalty is operationalised in two different ways, as will be addressed below. Countries that abolished the death penalty prior to the start of the observation period have to be omitted from the sample, since they were not observed at the time of abolition. The operationalisation of abolition determines the number of countries this applies to, thereby necessitating the use of two different datasets.

Since countries that abolished the death penalty before 1960 are omitted from the sample, the analysis is not based on a random sample of all countries in the world. Rather, the analysis is based on two samples that represent the population of countries *that had not abolished the death penalty by the end of 1959*. Thus, it must be kept in mind that the results do not provide grounds for statistical generalisation onto countries outside the observed sample, even if effects are found to be statistically significant.

Operationalising abolition of the death penalty is not necessarily a straightforward matter. Some countries whose laws still provide for the death penalty do not use it regularly, and may not have executed anyone for years. Gambia, for instance, still retains the death penalty in law, but has not executed anyone since 1981 (Amnesty International 2008a). In other countries executions may be a common occurrence. 470 people are known to have been executed in China in 2007, but as information about the death penalty is classified as a state secret there, the real number is unknown and undoubtedly much higher (Amnesty International 2008e). The approach in this thesis will be to disregard the extent to which capital punishment is in use, and to define abolition as the removal of the death penalty from the laws of a country.

However, as it has been, and to a certain extent still is, very common for countries to abolish the death penalty for so-called *ordinary crimes*, while retaining it for *extra-ordinary crimes*,

which mainly consist of crimes committed in war-time, two different operationalisations of abolition will be used. The strictest operationalisation defines abolition as abolition of the death penalty *for all crimes*, which includes war-time crimes. This requirement is loosened in the second operationalisation, where abolition is defined as abolition *for ordinary crimes*. Here countries that have abolished the death penalty for ordinary crimes, but that retain it for extra-ordinary (war-time) crimes, are also classified as abolitionist, along with those that have abolished capital punishment for all crimes. Most of the theories regarding death penalty abolition do not distinguish between different forms of abolition. Running the analyses with two operationalisations of the dependent variable will allow for testing whether any of the independent variables affect the two forms of abolition differently.

1.5. Structure of the thesis

The thesis starts off, in Chapter two, with a brief presentation of the history of the death penalty and the abolitionist movement, and a cursory overview of the use of capital punishment in the world today. This will serve as an introduction to the subject under study, and as a context for the theoretical discussion. Chapter three presents the political, cultural and socio-economic factors that are expected to influence abolition. Chapter four deals with the methodological issues of the analysis. The logic and central concepts of event history analysis are addressed, along with the issues of interpretation and assumptions that are specific to the Cox proportional hazards model. Chapter five presents the data on which the analysis is based, and the operationalisation of the dependent and independent variables. In Chapter six, the results of the analysis are presented, starting off with a brief look at the bivariate Cox regressions, and moving on to the multivariate models. Chapter seven sums up the thesis, suggests some possible implications of the findings, and points to potentially fruitful subject matters for future research.

2. Past and present of the death penalty and its abolition

This chapter will briefly present the history of the death penalty, with a focus on the development of the abolitionist movement. It will also give a brief overview over the use of capital punishment in the world today. This will give an introduction to the subject under study, and serve as the framework for the arguments that will be presented in the theoretical discussion.

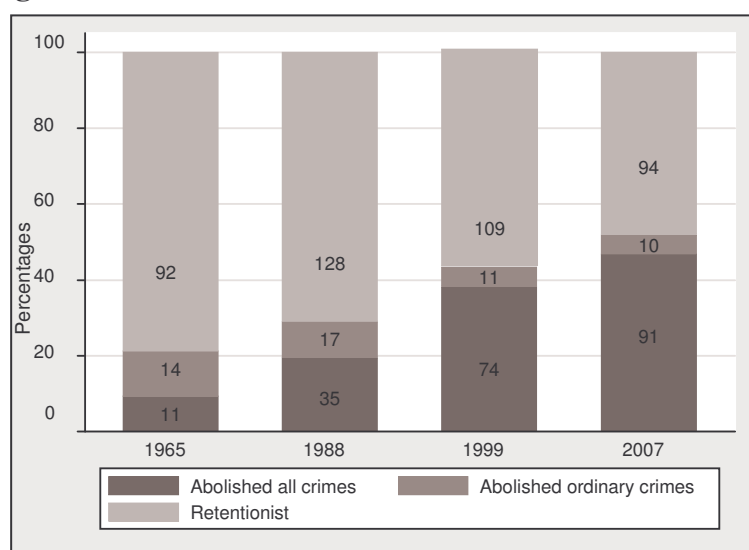
2.1. History of the death penalty and the abolitionist movement

The use of capital punishment has a long history. Anthropologists claim that drawings made by pre-historic cave-dwellers show an execution. The earliest mention of the death penalty in law texts is found in the ancient Babylonian *Code of Hammurabi*, from around 1750 BC (Schabas 2002: 3). Even though the extent to which the death penalty has been enforced has varied between countries and time periods, capital punishment has been widely accepted as a weapon of social control throughout the world since ancient times. This started to change towards the end of the eighteenth century, with liberal utilitarian and humanistic ideas originating in the Enlightenment in Europe (Hood and Hoyle 2008: 9). The modern abolitionist movement can be traced back to the Italian criminologist Cesare Beccaria, who published his work *On Crimes and Punishment* in 1764 (Beccaria and Young 1986). Beccaria argued that the death penalty was both useless and inhumane, and his work convinced statesmen such as Voltaire, Jefferson, Paine, Lafayette and Robespierre that capital punishment should play no role in a modern society (Schabas 2002: 5). In the 1780's the rulers of Tuscany and Austria followed Beccaria's ideas and suspended capital punishment for several years, as did Russia under the Empresses Elizabeth and Catherine II (Hood and Hoyle 2008: 11).

In 1846 the American state of Michigan became the first jurisdiction in modern times to abolish the death penalty for murder. Venezuela became the first country in the world to permanently abolish capital punishment for all crimes, doing so in 1863. By the end of the first quarter of the twentieth century, several other Latin American countries had followed suit: Colombia, Costa Rica, Ecuador, Panama and Uruguay all abolished the death penalty for all crimes after gaining their independence. Several Western European countries were also forerunners in terms of abolition, although these countries tended to retain the death penalty for war-time crimes. Portugal, San Marino, the Netherlands, Norway and Sweden all

abolished the death penalty for crimes committed in peacetime prior to 1925 (Hood and Hoyle 2008). Despite these early moves towards abolition, by the time that Professor Norval Morris reported to the UN on the position of capital punishment in 1965, abolitionist countries were still greatly outnumbered by retentionist countries (United Nations 1967). As seen in Figure 1, the number and share of abolitionist countries continued to rise at a steady but not dramatic pace over the next 20 years, so that there were 35 completely abolitionist countries in the world by the end of 1988, as well as a further 17 that had abolished capital punishment for ordinary (peacetime) crimes. Over the next two decades, however, the pace of abolition quickened considerably. By the end of 2007, 91 countries, or 46 percent of the countries of the world, had abolished the death penalty for all crimes, and an additional ten had abolished for ordinary crimes, making more than half of the countries in the world (or 52 percent) abolitionist for all or for ordinary crimes.

Figure 1: Number of abolitionist and retentionist countries



The bar chart shows numbers and percentage of abolitionist and retentionist countries in the world at the end of the year. Sources: Hood and Hoyle (2008: 12,14)⁷ and United Nations Economic and Social Council (2000).

Among the abolitionist countries included in the Morris report of 1965, there were only two that were situated outside Western Europe or Central and South America (Hood and Hoyle 2008; United Nations 1967).⁸ Since then Europe has become a “death penalty free zone”, with

⁷ While the numbers of abolitionist countries by the end of 1965 is given by Hood and Hoyle (2008), the number of retentionist countries and thus the total number of countries is not given there for this year. The total number of countries, on which the percentages and the number of retentionist countries are based, is the number of UN member states in 1965 (United Nations 2008a). This is not a perfect measure, as some independent countries were not UN members, but it is the best available solution.

⁸ Israel abolished the death penalty for ordinary crimes in 1954, and New Zealand did the same in 1961.

all countries but one (Belarus) having abandoned capital punishment. Furthermore, the abolitionist movement has spread to almost all regions of the world.⁹ 14 African countries¹⁰ and 11 Pacific island states¹¹ have abolished the death penalty. Although four Asian countries also have abandoned capital punishment,¹² abolition remains contested here. The position of capital punishment is also very strong in North Africa and the Middle East, where Israel remains the only country to have abolished the death penalty for ordinary crimes (Hood and Hoyle 2008).

Essential to this abolitionist wave has been the development of international human rights legislation in the post-war period, and the related political movement to give the death penalty the status of a violation of fundamental human rights (Hood 2001; Hood and Hoyle 2008; Schabas 2002). Thus, whereas retentionist countries argue that capital punishment is merely one aspect of criminal justice policy, and hence an issue to be decided by each country, abolitionists view the death penalty as a major violation of human rights, and therefore a matter for international legislation.

The question of capital punishment was at the core of the international human rights law debate from its very beginning. The Universal Declaration of Human Rights, adopted by the United Nations General Assembly in 1948, was the first normative instrument of the new system, and proclaimed the “right to life” as its centrepiece. Although the possibility of encouraging abolition of the death penalty was debated, this was not mentioned in the final text (Schabas 2004: 36-37). Recognising that complete abolition of the death penalty was not on the immediate international agenda, the initiatives coming out of the UN changed their focus to attempts to limit the use of the death penalty (Schabas 2002: 13). A resolution adopted by the Economic and Social Council in 1971 called for the progressive restriction of “[...] the number of offences for which the death penalty might be imposed, with a view to its eventual abolition” (Hood and Hoyle 2008: 22). In 1989 the UN General Assembly adopted the *Second Optional Protocol to the International Covenant on Civil and Political Rights Aiming at the Abolition of the Death Penalty*. This was the first universal treaty abolishing the

⁹ The region-wise death penalty status discussed in this section refers to the situation by the end of 2007, and the information is taken from Hood and Hoyle (2008).

¹⁰ Angola, Cape Verde, Cote d’Ivoire, Djibouti, Guinea-Bissau, Liberia, Mauritius, Mozambique, Namibia, Rwanda, Sao Tome and Principe, Senegal, Seychelles, and South Africa are all abolitionist for all crimes.

¹¹ Cook Islands, East Timor, Kiribati, Marshall Islands, Micronesia, Palau, Samoa, Solomon Islands, Tuvalu, Vanuatu have abolished the death penalty for all crimes, and Fiji has abolished for ordinary crimes.

¹² Bhutan, Cambodia, Nepal and the Philippines are all abolitionist for all crimes.

death penalty (Schabas 2002: 174).¹³ By the end of 2007, 74 countries had signed or ratified the Second Optional Protocol (Hood and Hoyle 2008).

Two regional human rights systems have been forerunners in the abolitionist movement: those of Europe and Latin America (Schabas 2002). The Council of Europe has been central to the success of European abolitionism. Protocol No. 6 to the European Convention on Human Rights, abolishing the death penalty in peacetime, entered into force in 1985, and in 1994 ratification of the Protocol was made a precondition for membership in the Council of Europe (Schabas 2002: 14). In 1990, the Organisation of American States adopted the *Protocol to the American Convention on Human Rights to Abolish the Death Penalty*, calling for countries to abstain from the use of capital punishment, although not requiring that they remove the death penalty from their laws (Hood 1998: 743).

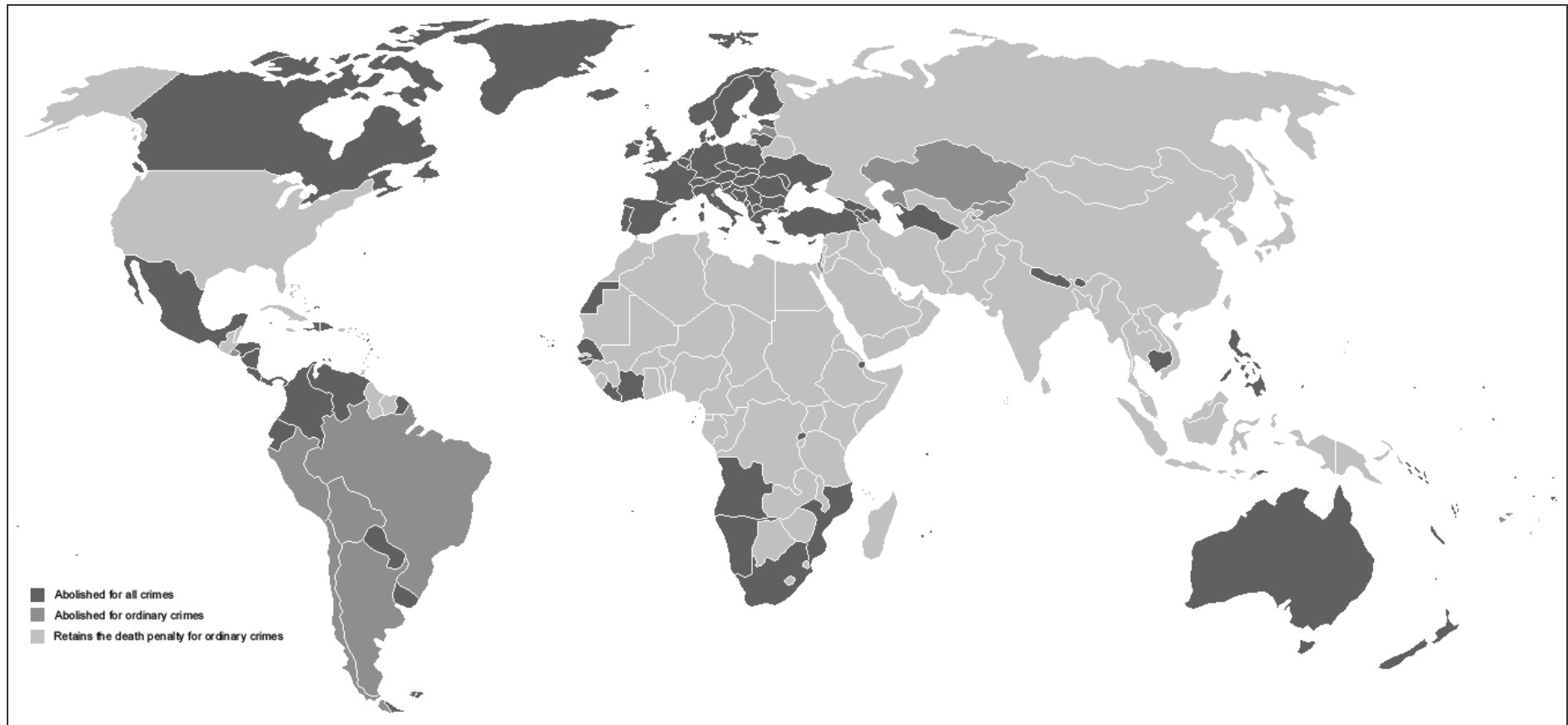
2.2. Use of capital punishment in the world today

As seen above, by the end of 2007, 91 countries had abolished the death penalty for all crimes, and an additional 10 had abolished for ordinary crimes. The 94 remaining countries retained the capital punishment for ordinary crimes such as murder. Figure 2 presents the legal status of the death penalty across the countries of the world. Of the 94 retentionist countries, however, 33 are considered by Amnesty International to be *de facto* abolitionist, as they have not executed anyone for the past 10 years and are believed to have a policy or established practice of not carrying out executions (Amnesty International 2008a; Hood and Hoyle 2008).

Numbers from Amnesty International (2008e) state that at least 1,252 people were executed in 24 countries in 2007, and at least 3,347 death sentences were imposed in 51 countries. These are minimum figures, and Amnesty indicates that the true numbers are likely to be much higher. As many as 27,500 people are estimated to be on death row across the world. In 2007, 85 percent of all known executions took place in five countries: China, Iran, Saudi Arabia, Pakistan and the United States. China executed more people than any other country, with 470 confirmed executions. Saudi Arabia, however, had the highest number of executions per capita (Amnesty International 2008e).

¹³ The Second Optional Protocol permits capital punishment for the most serious crimes committed in wartime, providing that the country made a reservation of this right at the time of ratification or accession. Only five countries have made such a reservation (Schabas 2002: 182-185).

Figure 2: Worldwide death penalty status by the end of 2007



The map is based on an illustration from Wikipedia (2008), and has been validated and updated with information from Amnesty International (2008a).

3. Theorising death penalty abolition

The decision whether or not to abolish the death penalty is in a strict sense a legal question. Nevertheless, whether this decision is taken by democratically elected representatives or non-democratic rulers, it is affected not only by aspects of the legal system, but also by extralegal features of society. These features may apply to society as a whole or to its individuals. Decision-makers are constrained and influenced by the political, cultural, social and economical features that characterise society at a central level, as well as by their own personal beliefs and by the opinion of the people.¹⁴ This chapter will present the political, cultural and socio-economic factors that are believed to influence the likelihood of a country abolishing capital punishment. Integrated in this discussion will be a presentation of the hypothesised effects.

3.1. *Political factors*

Political factors are believed to strongly influence the likelihood of abolition of the death penalty (Neumayer 2008b). These include both domestic features of the political system (democracy, democratic transitions, the political orientation of the executive, and experience with war) and sources of international abolitionist pressure (membership in the Council of Europe and the share of abolitionist countries in the region).

3.1.1. Democracy and democratisation

Abolitionists frequently argue that the death penalty violates fundamental human rights. If capital punishment is seen as a human rights matter, democracies can be expected to be more willing to abolish the death penalty than non-democracies, since democracies are expected to better respect the human rights of their citizens (Neumayer 2008b: 250). The existence of a negative relationship between the degree of democracy and violations of human rights is supported by a wide range of quantitative research (e.g. Poe, Tate, and Keith 1999; Davenport and Armstrong 2004).

¹⁴ Even in democratic countries, popular opinion does not dictate public policies, and as will be expanded on below, most countries that have abolished the death penalty have in fact done so against the opinion of the majority of the people (Garland 1990: 246). However, this does not mean that public opinion can never have an effect on the decision of whether to retain or abolish the death penalty.

Even if the death penalty is not seen as a human rights issue, there is reason to believe that democracies are more likely to abolish capital punishment than less democratic countries. A range of arguments have been presented that focus on how certain principles of democracy are incompatible with capital punishment.¹⁵ According to Franck, Schabas and Nyman (2003: 154), “[c]apital punishment is basically incompatible with the most important tenet of democracy: the respect for the individual person”. Similarly, the equal worth of all citizens under democracy is seen as difficult to reconcile with capital punishment, because true equality would allow nobody the right to deprive another person of their life, no matter what crime this person is guilty of (Franck et al. 2003: 154; Burt 1994: 90).

Furthermore, Burt (1994: 90) focuses on the possibility of reconciliation among adversaries as one of the key characteristics of democracy. The irreversibility of the death penalty eliminates this prospect. Similarly, Sarat (2001) sees the death penalty as “the ultimate assertion of righteous indignation” and “of power pretending to its own infallibility”, and claims that democracy cannot coexist with either such anger or such confidence (Sarat 2001: 16).

Inherent in the concept of democracy is the fact that the governing individuals and groups are willing to accept that there are limits to their powers (Neumayer 2008b: 250). This implies that the government of a more democratic country will be more willing to accept limits on the types of punishment used than the government of a less democratic country, and thus that a higher degree of democracy will increase the likelihood of abolition of the death penalty. While the most common justification given for the use of capital punishment is the need to respond to and prevent serious crimes, the death penalty can also be a tool used against political opponents and other troublesome individuals. Whereas changes in government are institutionalised in a democracy, and a person or party that loses power after an election knows that they have the opportunity of regaining it, much more is at stake for dictators, and they will probably be less likely to give up any potential instrument of regime preservation (Dunér and Geurtsen 2002: 13; Greenberg and West 2008: 298). Badinter (2004: 11) goes so far as to say that “[t]here is an indissoluble link between

¹⁵ Arguments claiming that there is some inherent conflict between democratic values and use of capital punishment are generally presented by researchers that must be classified as abolitionists, and retentionists from democratic countries would certainly claim that there is no such intrinsic conflict.

dictatorship and death penalty [...] because it is the ultimate expression of the absolute power that the rulers wield over their subjects.”

Level of democracy is the one factor that most consistently has been found to be related to abolition of the death penalty in statistical analyses. Neumayer (2008b) found that higher levels of democracy significantly raise the likelihood of abolition of the death penalty. Furthermore, all cross-national statistical analyses of the presence or absence of the death penalty that I have come across have found level of democracy to be a statistically and substantively significant determinant, with higher levels of democracy coinciding with absence of the death penalty (Greenberg and West 2008; Killias 1998; Ruddell and Urbina 2004; Neapolitan 2001).¹⁶ Thus, abolition of the death penalty is expected to be more likely the higher a country's level of democracy is.

H1: *Higher levels of democracy raise the likelihood of death penalty abolition.*

Not only is the level of democracy seen as related to the likelihood of abolition of the death penalty, a *change* in the degree of democracy can also be expected to have an effect. A democratic transition, that is a regime change towards democracy, may often quickly be followed by abolition of the death penalty. Abolition may be seen by the new government as a way of distancing the new from the old regime, as human rights often play an important role in such a transition (Neumayer 2008b: 250). One example of such a trajectory is Romania, where the fall of Ceaușescu in 1989 was marked by an immediate abolition of the death penalty (Hood 2001: 339). Neumayer (2008b) found that a move towards democracy significantly raised the chance of abolition of the death penalty.¹⁷

H2: *A democratic transition raises the likelihood that capital punishment will be abolished.*

¹⁶ Although these analyses vary in their use of measures (Polity score (Neumayer 2008; Ruddell and Urbina 2004), political rights and/or civil liberties from Freedom House (Greenberg and West 2008; Neapolitan 2001), and whether or not the executive and/or parliament was elected through free elections (Killias 1998)), all these measures are closely related to the concept of democracy. Note that the analyses of Killias (1998) and Neapolitan (2001) include few or no statistical controls.

¹⁷ Neumayer's (2008) choice of measurement may, however, not be optimal, as will be elaborated in the section on the operationalisation of variables.

An important point to keep in mind regarding the relationship between democracy or democratisation and abolition of the death penalty is that abolition rarely has come as a result of demands from the general public (Hood and Hoyle 2008: 350). Leadership by the political elite is important, as the death penalty in most countries actually has been abolished against the opinion of a majority of the people (Garland 1990: 246). In France, for example, the death penalty was abolished for all crimes in 1981, with two thirds of the population being in favour of capital punishment, according to opinion polls (Dunér and Geurtsen 2002: 14).¹⁸ As Neumayer (2008b) points out, this suggests that any positive link between democracy and abolition is not rooted in democracies being more accountable to the will of the people. What is important is rather that political elites in democracies are willing to grant all individuals, even criminals, certain inviolable rights, and to go against public opinion, which may be in favour of the death penalty (Neumayer 2008b: 250).

3.1.2. Political orientation of the executive

There is also reason to believe that the political orientation of the government in power matters for the likelihood of abolition of the death penalty. More specifically, a country governed by a left-wing party is expected to be more likely to abolish the death penalty than a country governed by a right-wing party. This is because politicians and voters on opposite ends of the political spectrum are believed to have differing views on crime and punishment.

Crime is typically understood in individualist terms by those on the right of the political spectrum (Greenberg and West 2008: 298). Criminals are autonomous and rational individuals who are responsible for their own actions. This view was clearly reflected when the former British Prime Minister from the Conservative party, John Major, on one occasion said that “[c]rime is a decision, not a disease” (Jacobs and Carmichael 2004: 252). Criminals deserve punishment, and the punishment should be equivalent to the offence, so that there is a kind of fair trading in the justice system (Jacobs and Carmichael 2002: 113; Garland 1990: 113). This form of reasoning is borrowed from the marketplace, and of course opens up for the use of capital punishment for crimes that lead to a loss of life. Favoured strategies for crime prevention include deterrence and incapacitation (Greenberg and West 2008: 299). Since crime is seen as stemming from rational choices, increasing the expected costs of

¹⁸ Other countries that abolished the death penalty at a time when public opinion polls were in favour of the death penalty include the United Kingdom, Canada and Germany (Schabas 2004: 310).

breaking the law is believed to deter crime. The loss of one's life is the most extreme form of punishment, and the death penalty is therefore believed to be the most effective deterrent. Furthermore, because many on the political right see human nature as fixed, they believe that the most vicious criminals cannot be reformed, and therefore must be executed so that they no longer can harm the innocent (Jacobs and Carmichael 2002: 113).

Politicians and voters on the left side of the political spectrum tend to see crime as a product of social inequalities and unfair disadvantages. The favoured strategies for crime prevention include social reforms, rehabilitation of offenders and gun control (Greenberg and West 2008: 299; Garland 2001: 37). When crime is seen as being in part caused by things that are outside the control of the criminal, for instance coming from a poor family and having little education, and when it is believed that all criminals can reform, the death penalty is generally not seen as a useful tool.

Lakoff (1996) provides an interesting take on this issue, arguing that different views on punishment in different political camps are based on conflicting moral systems. As a cognitive linguist Lakoff studies how people conceptualise the world, and in his study of conservatives versus liberals in the United States he claims that differing moral systems are grounded in differing models of the family. This "[...] link between family-based morality and politics comes from one of the most common ways we have of conceptualizing what a nation is, namely, as a family" (Lakoff 1996: 13). The conservatives base their moral system on a "strict father model", seeing crime as a result of a lack of discipline and believing in the deterrent effect of strict punishment, including the death penalty. Liberals, on the other hand, adhere to the "nurturant parent model", believing that violence begets violence and that crime is caused by social factors and best prevented by relieving social problems. Nurturance implies respect for life, and liberals are therefore more likely to favour abolition of capital punishment (Lakoff 1996).

The abolition process in the United Kingdom exemplifies how views on the death penalty can differ between the political camps.¹⁹ The Labour administration set up a committee to consider the death penalty as early as in 1929, and a bare majority, consisting mainly of

¹⁹ The section on abolition in the United Kingdom is based on the description given by Hood and Hoyle (2008: 42-47).

Labour members, recommended that the death penalty should be abolished for an experimental period of five years. However, the Conservative members of the committee resigned and refused to sign the report. When the death penalty for ordinary crimes eventually was abolished in 1965, it was under a Labour government. By this time there had been a shift of opinion also among most Conservatives, and much of Britain's elite shared the abolitionist view. Nevertheless, between 1969 and 1993 there were made 13 attempts by Conservative MPs to reintroduce the death penalty for certain categories of murder. Neumayer (2008b) found that a left-wing executive significantly raises the likelihood of abolition of the death penalty.²⁰

H3: *Abolition of the death penalty is more likely under a left-wing executive than under a right-wing executive.*

The theories presented above juxtapose left-wing and right-wing politicians and voters. The behaviour of centrist politicians and voters is not theorised, and therefore no grounds are provided for hypotheses about the likelihood of abolition under a centrist executive. Previous research has grouped centrist with right-wing executives in the reference category, indicating an interest in the behaviour of left-wing executives, compared to all others. However, as there are no grounds for expectations linked to centrist executives, such a solution may not be effective. Therefore, the effect of a centrist executive will be tested in this thesis, under the hypothesis that centrist executives may behave differently from right-wing executives in terms of abolition of the death penalty. *How* they may differ, however, is an open question.

H4a: *Abolition of the death penalty is more likely under a centrist executive than under a right-wing executive.*

H4b: *Abolition of the death penalty is less likely under a centrist executive than under a right-wing executive.*

²⁰ Greenberg and West (2008) also include a measure of the political ideology of the executive in their analyses, and find that a left-wing executive has a significant negative effect on the presence of the death penalty. However, since Greenberg and West analyse whether countries have or have not abolished up until a given point in time, the political ideology of the executive is observed at that point in time (averaged over three years), and this only rarely coincides with the actual time of abolition. Thus, any conclusions about the effect of political ideology on the propensity to abolish the death penalty will be flawed.

3.1.3. Experience with war

As mentioned earlier, some countries retain the death penalty for offences committed during wartime even if they choose to abolish it for ordinary crimes. As Neumayer (2008b: 251) points out, there is reason to believe that a country's experience with war affects its willingness to give up the death penalty for crimes committed during a war, and more specifically that a recent experience with war diminishes the likelihood of abolition of the death penalty *for war-time crimes*. While arguments for or against the death penalty generally do not differentiate between times of peace and war, Dunér and Geurtsen (2002) point to one exception: A retentionist state may argue that in a time of war or a war-like situation the values at stake are so great that the death penalty is needed to protect the existence of the society. As a corollary, it can be expected that "[t]he bigger the risk of war, the less inclined states will be to forgo the death penalty [for war-time crimes]" (Dunér and Geurtsen 2002: 11). It can be assumed that the risk of war will be experienced as greater if a country has recently been involved in a war, and that this sense of risk will diminish as time goes by without a war breaking out. Dunér and Geurtsen (2002: 12) run a simple table analysis and conclude that countries having recently experienced war are somewhat less likely to have accepted abolitionist protocols. Neumayer (2008b), on the other hand, finds no evidence that the number of years that have gone by since a country last experienced an armed political conflict affects its likelihood of abolishing the death penalty for all crimes.

Greenberg and West (2008) present a somewhat different argument concerning the relationship between experience with war and abolition of the death penalty. They claim that a country involved in a war will develop a political culture where "an enemy is depicted as an implacable foe" and where killing is endorsed as necessary for the defence of society. This logic can easily be extended to those considered to be internal enemies, such as criminals (Greenberg and West 2008: 311). Involvement in war can therefore be expected to reduce the likelihood of a country abolishing the death penalty for ordinary as well as for war-time crimes. Furthermore, it seems reasonable to assume that a political culture of this kind will not change overnight when the war ends, but rather that it may gradually be replaced. Thus, there is reason to expect the negative effect of experience with war to diminish as the years go by without another war. Conversely, the likelihood of abolition can be expected to increase with the number of years that have passed since such an experience.

H5: *The likelihood of abolition of the death penalty will be greater the more years that have passed since a country was last involved in a war or a war-like situation.*

3.1.4. International pressure

In addition to these domestic political factors that may affect abolition, retentionist countries have experienced growing international pressure to abolish the death penalty during the last four decades (Neumayer 2008b: 251). Essential to this development is the post-war emergence of international human rights legislation, and the parallel development among abolitionists of the belief that the death penalty constitutes a breach of universal human rights and therefore can and should be included in such legislation (Hood and Hoyle 2008). As the death penalty has gone from an issue decided by national criminal justice policy to, in the eyes of many, a violation of fundamental human rights, committed abolitionist countries are no longer content with merely ending capital punishment at home (Neumayer 2008b: 252). For instance, the EU “[...] considers that abolition of the death penalty contributes to the enhancement of human dignity and the progressive development of human rights”, and consequently has made abolition of the death penalty a requirement for membership (European Union 1998). Furthermore, its *Guidelines to EU Policy Towards Third Countries on the Death Penalty* declare that it “[...] has moved beyond [abolition within its own jurisdiction] and now espouses abolition for itself and others” (European Union 1998).

An even more central institution in the fight for universal abolition of the death penalty has been the Council of Europe. The Parliamentary Assembly of the Council of Europe started debating the subject in the late 1970s, and in 1983 *Protocol No. 6 of the European Convention on Human Rights* was opened for signature, entering into force in 1985 (Krüger 2004). Protocol No. 6 requires abolition of the death penalty in peacetime, allowing countries to provide for the death penalty in time of war or in imminent threat of war. In 1994 the Council of Europe made it a precondition for membership to implement an immediate moratorium on executions, and then sign and ratify Protocol No. 6 within a set number of years (usually three years) (Hood and Hoyle 2008: 22-24; Ravaud 2004). Although Protocol No. 6 allows countries to retain the death penalty in time of war or in imminent threat of war, many countries that signed and ratified it chose to relinquish this opportunity and abolished the death penalty for all crimes. Nevertheless, as the Parliamentary Assembly of the Council wanted to formalise abolition *for all crimes*, Protocol No. 13 was drawn up and opened for signature in 2002. Countries that ratify

Protocol No. 13 commit themselves to abolition of the death penalty in all circumstances (Ravaud 2004). By the end of 2007, all 47 member countries had signed or ratified Protocol No. 6, and all but two had signed or ratified Protocol No. 13 (Hood and Hoyle 2008: 414-416; Council of Europe 2008).

The post-communist countries have seen membership in the Council of Europe as very important, not only in its own right, but also as a step towards EU and NATO membership (Fawn 2001). Western European countries have therefore been able to use the prize of membership to pressure retentionist countries in Eastern Europe to abolish the death penalty (Neumayer 2008b: 252). Although some countries did not comply by their commitments without considerable delay and additional prodding from the Council, the strategy has largely been successful.²¹ At the time of writing, all Council of Europe members but one have abolished the death penalty for all or for ordinary crimes, the exception being Russia, where a moratorium on executions has been in place since 1996 (Wohlwend 2004). In his statistical analyses, Neumayer (2008b) found Council of Europe membership to significantly and strongly increase the chance of abolition of the death penalty. It is therefore expected that exposure to abolitionist pressure through membership in the Council of Europe during the period when abolition has been on its agenda will raise the likelihood of abolition.

H6: *Countries exposed to abolitionist pressure through membership in the Council of Europe are more likely to abolish the death penalty than countries not exposed to such pressure.*

More generally, as Neumayer (2008b: 253) points out, countries are likely to be influenced by the decisions concerning the death penalty made by other countries in the region. The existence of policy diffusion is well established in the literature on economic policy (Simmons and Elkins 2004). Such contagion may work through “communication, learning, imitation and altered reputational payoffs” (Neumayer 2008b: 253). Diffusion is likely to exist for other types of policy as well, including penal policies. If most countries in a region have abolished the death penalty, any remaining retentionist countries will be put under great

²¹ Wohlwend (2004) describes the efforts of the Parliamentary Assembly of the Council of Europe to ensure that Ukraine and Russia should honour the commitments they had entered into. Ukraine abolished the death penalty for all crimes in 1999. In Russia the death penalty is still on the statute books, but no executions have been carried out since 1996 (Amnesty 2008b; Hood and Hoyle 2008).

pressure to abolish. If however the majority of countries in a region are retentionist, the continued use of the death penalty will be easier to defend in the face of both domestic and international pressure. Furthermore, as migration is generally more common *within* than *across* regions, retentionist countries in largely abolitionist regions may start to favour abolition in order to avoid potential conflicts with neighbouring countries over such sensitive issues as the execution of foreign citizens or getting prisoners suspected of capital crimes extradited from an abolitionist country (Neumayer 2008b: 253). Neumayer (2008b) found a higher share of abolitionist countries in the region to significantly raise the chance of abolition.

H7: *A higher share of abolitionist countries in the region raises the likelihood of abolition of the death penalty.*

It is difficult to discuss international abolitionist pressure without mentioning the role of NGOs campaigning for abolition. First and foremost among them is Amnesty International, with more than 2.2 million members spread across all regions of the world (Amnesty International 2008d). Amnesty International provides information on the use of capital punishment worldwide, and protests regularly both against individual death penalty cases and against the use of capital punishment in general. Other NGOs working for abolition include Hands Off Cain, the International Federation for Human Rights, and Ensemble Contre la Peine de Mort (Together Against the Death Penalty), all of which publish reports and campaign against the death penalty (Hood and Hoyle 2008: 27). The abolitionist pressure applied by these organisations, however, is not modelled in this analysis. Firstly, such pressure is very hard, if not impossible, to quantify. Secondly, abolitionist pressure from these NGOs is applied against *all* retentionist countries. Countries are put under massive amounts of pressure to abolish, such as Iran and the United States, have withstood the pressure and remain retentionist. Thus, it seems unlikely that there is a direct relationship between the amount of abolitionist pressure exerted by NGOs, and the likelihood of abolishing the death penalty. It seems more credible that some countries are more likely to respond to such pressure than others, due to factors that hopefully *are* included in this analysis.

3.2. Cultural factors

This section will present two features of a country's culture that have been claimed to influence abolition of the death penalty. Cultural factors may influence policy decisions such as abolition of the death penalty because culture provides values that shape policies. Decision-makers may adopt policies that reflect their own values, those of their constituents, or both (Greenberg and West 2008: 303). One important part of a country's culture is its religion, which may serve as the foundation for its predominant values. Also embedded in a country's culture is its legal system. In addition to influencing and reflecting the values of the population, the legal system serves as the framework within which prospective moves towards abolition would have to take place.

3.2.1. Religion

Religiously justified arguments have been put forth in the international abolitionist debate based in many religions. No religion, however, has been used in this manner to the same extent as Islam. The fact that countries with a predominantly Muslim population are underrepresented in the abolitionist camp, combined with the often repeated arguments coming from these states that abolition is inconsistent with Islam, will easily lead to the expectation that a large proportion of Muslims in the population will lower the likelihood of abolition of the death penalty. The question is of course, as with all observed correlations, whether this indeed is a causal relationship or in reality is the effect of other underlying features of these countries.

Islamic states have been among the most vocal opponents of abolition of the death penalty, often referring to Islam and Islamic law (the *Shari'a*) in their reasoning (Schabas 2002: 16). They also frequently argue that the death penalty is a matter for national legal policy rather than international human rights legislation (Wyman 1997).²² Many countries with a predominantly Muslim population, including Pakistan (Schabas 2002: 175), Saudi-Arabia (Schabas 2002: 179) and Oman (Dunér and Geurtsen 2002: 14), have rejected abolition of the death penalty on the grounds that it would run counter to Islamic law. Similarly, the

²² One example of such reasoning occurred during discussions concerning a draft resolution on a moratorium on executions in the General Assembly of the UN. Pakistan, speaking on behalf of the Organization of the Islamic Conference, argued that if such a resolution should be considered by the UN, it should be handled by the Sixth Committee, dealing with legal issues, and not by the Third Committee, which deals with human rights issues (Schabas 2002: 199).

Sudanese representative to the General Assembly of the UN in 1994 argued that “[c]apital punishment is a divine right of some religions. It is embodied in Islam and these views must be respected” (Hood 2001: 341).

The primary sources for Islamic law are the Koran and the *Sunna*, which consists of the sayings and deeds of the Prophet Muhammad (Bassiouni 2004). While the Koran states that everyone has the right to life, this principle allows for one exception, as killing is permitted when a court of law demands it (Schabas 2000: 230). Furthermore, for some crimes the death penalty is mandatory under Islamic law, and this of course is central to the argument that abolition of the death penalty would be inconsistent with the *Shari’a*.²³ While only Saudi Arabia and Yemen apply Islamic law in its entirety, it has nevertheless had a strong influence on views on punishment in most predominantly Muslim countries (Hood 2002: 37; Neumayer 2008b: 254).

There are three reasons why the links between religion and punishment generally are stronger in Muslim than in other countries. Firstly, Islamic political culture has not advocated a separation of church and state (Greenberg and West 2008: 306). Secondly, while modern Judaism and Christianity have largely abandoned the belief that the Bible is the literal word of God, and opened up for interpreting it in light of the historical time at which it was written, such developments have had far less influence on Islam (Greenberg and West 2008: 307). The Koran is seen as the word of Allah, and the use of best reasoning (*ijtihad*) and scientific knowledge to interpret the *Shari’a* is generally seen as unacceptable (Bassiouni 2004). Thirdly, the recent resurgence of politicised Islam in many predominantly Muslim countries has been accompanied by a rise in use of religious clothing, a swell in the number of religious schools, and increased popular support for the use of religious laws. As a consequence, Islam is present in the public life of many predominantly Muslim countries to a much larger extent than other religions are in other parts of the world (Greenberg and West 2008: 307).

²³ According to Bassiouni (2004), death penalty is mandatory under Islamic law for crimes against Allah and the Prophet, and by extension against the legitimate rulers of Islamic societies, providing that this crime results in a homicide. He argues that it is questionable whether the death penalty is mandatory for apostasy and adultery (Bassiouni 2004).

Not all legal scholars agree that abolition of the death penalty is a violation of the *Shari'a*. Bassiouni (2004) argues that the use of the death penalty in many Muslim countries goes far beyond what is required by the *Shari'a*, and that it can be substantially restricted without renouncing Islamic law. While the *Shari'a* does require the death penalty for a few crimes, for most crimes for which the death penalty is in use, Islamic law provides for alternative forms of punishment. The Koran actually deems victim compensation as preferable over the death penalty as punishment for murder (Bassiouni 2004). Bassiouni (2004: 185) concludes:

It is mercy that is Islam's hallmark because it is Allah's foremost characteristic. The just, *el-Adel*, is also one of Allah's divine characteristics. How Muslim societies have managed to stray so far from these and other noble characteristics of Islam can only be explained by reasons extraneous to Islam.

It is not the concern of this thesis to establish whether the true nature of Islam rules out abolition of the death penalty or not. Rather, the aim is simply to establish statistically whether a country with a predominantly Muslim population is less likely to abolish the death penalty than a country with a smaller Muslim population. It is nevertheless interesting to see that Bassiouni (2004) claims that the status of the death penalty in Muslim countries is explained by other factors than religion. Schabas (2000: 236) similarly concludes that "religion is little more than a pretext to justify a resort to harsh penalties that is driven by backward and repressive attitudes in the area of criminal law". This opens up for the possibility that other factors than religion, for instance lack of democracy, explain the fact that relatively few Muslim countries have abolished the death penalty.

At any rate, the fact that a number of countries with large Muslim populations have abolished the death penalty shows that there is no absolute incompatibility between Islam and abolition.²⁴ The results of previous research are inconclusive. While Neumayer (2008b) finds that the percentage of Muslims in the population has a statistically insignificant effect on the likelihood of abolition of the death penalty for all crimes, this effect reaches statistical significance in some of his models when abolition for ordinary crimes is considered.

²⁴ Albania (70 % Muslims) abolished the death penalty for ordinary crimes in 2000, and for all crimes in 2007. Azerbaijan (93.4 %) abolished for all crimes in 1998. Djibouti (94 %) abolished for all crimes in 1995. Senegal (94 %) abolished for all crimes in 2004. Turkey (99.8 %) abolished for ordinary crimes in 2002 and for all crimes in 2004. Turkmenistan (89 %) abolished for all crimes in 1999 (Central Intelligence Agency 2007; Amnesty International 2008).

Greenberg and West (2008) include both a dummy variable for countries that use Islamic law as well as a measure of the percentage Muslims in the population, but both fail to reach statistical significance. Nevertheless, a measure of the prominence of Islam will be included in the analysis of this thesis, under the assumption that a higher share of Muslims will lower the likelihood of abolition.

H8: *Abolition of capital punishment is less likely the higher the share of Muslims in the population is.*

3.2.2. Legal system based on English common law

The legal system of a country has been developed throughout its history, and researchers have suggested that a country's likelihood of abolishing the death penalty is lower if the legal system is based on English common law. In the eighteenth and nineteenth centuries, even petty theft was seen as a capital offence in England. While this was the case also in other European countries, execution rates were substantially higher in England, and the range of capital offences was limited at a much slower pace than in continental Europe (Greenberg and West 2008: 300). In fact, English liberals of that time were much more reluctant to support abolition than their continental fellows, and England was seen by abolitionists as "the most merciless of Christian countries" (Neumayer 2008b: 253). Common law traditions were spread throughout the British Empire, and according to Neumayer (2008b: 253), were accompanied by extensive use of the death penalty. Common law is based on the customs of the people rather than the decisions of rulers and legislators. Again it must be stressed that political leadership has been essential to the abolition of the death penalty in most countries, and that popular opinion at the time of abolition generally has favoured capital punishment (Garland 1990: 246). Moreover, when the customs on which the laws are based in many common law countries include a history of frequent use of the death penalty, this may at least partly explain why many common law countries retain the death penalty (Neumayer 2008b: 253-254), and may lead to expectations that a legal system based on English common law will lower the likelihood of abolition.

Furthermore, Greenberg and West (2008) note that English common law was developed as part of the gentry's strategy to limit the powers of the monarch, and that common law therefore emphasises the rights of individuals to a much larger extent than civil law. They suggest that this prominence of individualism in common law is accompanied by a more

moralistic, and thus more punitive, sanctioning system (Greenberg and West 2008: 322). While they do not elaborate on this claim, its logic seems to resemble the conservative view on morality and punishment discussed in the section on the political orientation of the executive. With individual rights comes individual responsibility, and thus transgressions can and must be punished. Both Neumayer (2008b) and Greenberg and West (2008) find a statistically significant negative relationship between common law and abolition of the death penalty.

H9: *Abolition of the death penalty is less likely in countries whose legal system is based on English common law.*

3.3. Socio-economic factors

This section will present a range of socio-economic factors that are believed to influence the likelihood of abolition of the death penalty. It includes level of development (economic and human), integration in the world economy, and sources of social threat (economic inequality, and ethnic/racial, linguistic and religious diversity).

3.3.1. Level of development

A quick glance at the use of the death penalty throughout the world will tell you that richer countries have abolished the death penalty to a larger extent than poorer countries. The question is of course whether this reflects a real relationship between level of economic development and the propensity to abolish the death penalty, or if this is a spurious relationship that in reality is explained by other factors.

Applying concepts from economic theory, we would expect the likelihood of abolition to increase with higher levels of economic development if abolition is assumed to be a “normal good”, that is, a good for which demand rises with higher income (Neumayer 2008b: 255). Palmer and Henderson (1998: 242) find it “[...] plausible that as both individuals and societies on average become wealthier, they are unwilling explicitly to impose some of the more cruel and unusual forms of punishment on criminals”. As mentioned, abolitionists frequently argue that the death penalty is a “cruel and unusual” form of punishment.

A similar argument can be found in the civilisation theory of Norbert Elias, where it is assumed that as nations modernise and civilise, they will develop more “civilised” ways of

resolving disputes, leading to the abolition of capital punishment (Neapolitan 2001: 692). Michel Foucault also argues that modernisation may be accompanied by changes in the views on punishment, as focus and confidence shift from physical punishments to those that attempt to rehabilitate the offender through discipline and therapy (Greenberg and West 2008: 311). As economic growth is central to the concept of modernisation, these last two points can be taken to link higher levels of economic development with a greater likelihood of abolishing the death penalty.

On the other hand, studies of support for capital punishment in the US actually show that people with higher income are more likely to support the death penalty (Neumayer 2008b: 255). Also, Marxist theory presents an argument for a negative relationship, where economic growth is assumed to lead to the growth of an unemployable surplus population that must be restrained from rebellion by the threat or use of state violence (Greenberg and West 2008: 311; Killias 1998: 182). It is not clear how well this theory fits our modern world, however, as large-scale unemployment exists not only in the richer countries.

Thus the theoretical framework seems to favour the existence of a positive relationship between level of economic development and abolition of the death penalty. However, previous findings give little credible support to this assumption. In the analyses of both Neumayer (2008b) and Greenberg and West (2008), the effect of level of economic development fails to reach statistical significance. Killias (1998) finds that richer countries are less likely to have the death penalty, but spuriousness cannot be ruled out, since this finding is based on a simple table analysis without any statistical controls. So, even if there are no strong expectations of finding a relationship between level of economic development and the likelihood of abolition, it is included in the analysis under the hypothesis that the effect will be positive.

H10: *A higher level of economic development raises the likelihood of abolition of capital punishment.*

The level of economic development is only one measure of the level of development in a country. The Human Development Index (HDI) measures three different aspects of development: health, knowledge and standard of living (United Nations Development

Programme 2008). It can probably be argued that a broad measure of human development is a better indication of modernisation and civilisation than a simple measure of economic development. For instance, Ruddell and Urbina (2004) use HDI as their measure of modernisation, and Neapolitan (2001) uses it as an indicator of a country's level of civilisation. Thus, there is reason to believe that human development may also be positively related to the likelihood of abolition, possibly more so than economic development is. Furthermore, greater knowledge, through education, is believed to foster utilitarian thinking and less reliance on tradition and religion (Greenberg and West 2008: 310). In a time when many question the efficacy of the death penalty,²⁵ and claim that it constitutes a grave violation of human rights, literacy and education may thus lead to a greater likelihood of abolishing the death penalty (Greenberg and West 2008: 310). In the US, surveys show that support for the death penalty declines with education. On the other hand, the general growth in educational attainment in the US over the past 50 years has not been matched by a corresponding decline in support for the death penalty (Greenberg and West 2008: 310). Greenberg and West (2008) find that level of education in a country has no significant direct effect on the probability that capital punishment is present.²⁶ Neapolitan (2001) includes human development in his analyses, but the HDI variable does not qualify for entry in his stepwise discriminant analysis.

H11: *Abolition of the death penalty is more likely at higher levels of human development.*

3.3.2. Integration in world economy

As mentioned before, abolitionists argue that the death penalty is a violation of basic human rights, and seek to pressure retentionist states towards abolition. Pressure from regional peers and through membership in the Council of Europe has already been covered, and both have been included in previous research (Neumayer 2008b). I will argue that it is reasonable to think that pressure can be applied through other channels as well, and that it can come from outside one's geographical region. More specifically, I find it credible that important trading partners will be in a strong position to put pressure on a retentionist country, and thus that countries that are highly integrated in the world economy will be more exposed to such

²⁵ It should be kept in mind that there exists no consensus as to the lack of efficacy of the death penalty, as for instance some researchers have found it to be an effective deterrent of violent crime (See Donohue and Wolfers (2005) for an overview of research on the deterrent effect of the death penalty).

²⁶ They do, however, find that level of education positively affects political rights, which again raises the probability that a country has abolished the death penalty (Greenberg and West 2008).

pressure. Integration in the world economy is here thought of as being highly dependent on selling and buying goods or services to and from other countries. In fact, Ruddell and Urbina (2004) have tentatively suggested that trading relationships may be a new arena for attempts at influencing the penal practices of other countries. To my knowledge, however, they have not explored this possibility.

Of course, not all business partners will argue for abolition, simply because many countries in the world retain the death penalty. In theory, retentionist countries can put pressure on abolitionist countries to reinstate the death penalty. However, very few countries have reinstated the death penalty after abolishing it. Furthermore, it seems clear that international pressure concerning the death penalty most of the time takes the form of abolitionist pressure. After all, an important argument used by retentionist countries is precisely that the death penalty is an *internal* policy choice.

H12: *Abolition of the death penalty is more likely in countries that are highly dependent on international trade.*

3.3.3. Social threat

Sociologists argue that the penal system is affected by social divisions (Neumayer 2008b: 254), and more precisely that death penalty abolition will be less likely in the presence of any of several sources of social threat (Greenberg and West 2008: 297). Neo-Marxist theories on punishment hold that criminal law and the agencies that administer it primarily serve the interests of the privileged, and that one use of the death penalty may be to control the “dangerous classes” that threaten social order (Jacobs and Carmichael 2002: 110; Garland 1990).²⁷ In Neo-Marxist theories, these “dangerous classes” are primarily the poor, and penal policy is thought of as one element of a wider strategy of controlling the poor (Garland 1990: 91).

These theories are generally taken to mean that abolition of the death penalty will be less likely in countries or jurisdictions with high levels of economic inequality (Greenberg and

²⁷ This family of theories on punishment is called “neo-Marxist”, but as Garland (1990: 84) points out, the relationship between them and Marxist orthodoxy is rather loose. There are no texts on punishment among the writings of Marx or Engels, and so these theories are merely based on the broader Marxist theories on social structures.

West 2008; Neumayer 2008b; Jacobs and Carmichael 2002). On the individual level, a higher level of economic inequality is expected to reduce interpersonal trust among strangers, as well as empathy between members of different social classes. This may lead to a greater willingness to rely on harsh punishment to ensure public safety (Greenberg and West 2008: 302-303), and may therefore reduce the likelihood of abolition of the death penalty.

H13: *The likelihood of death penalty abolition is lower where the level of economic inequality is high.*

The logic of economic threat theories has been extended to also apply to racial or ethnic differences, resulting in a theoretical framework called *minority threat theories* (Ruddell and Urbina 2004). The essence of these theories is that as ethnic or racial minority groups increase in numbers and size, they challenge the *status quo*, and compete for economic and political power. These challenges to established social arrangements are then met with an increase in formal social control (Ruddell and Urbina 2004: 906). As with high levels of economic inequality, greater ethnic and racial diversity is expected to reduce interpersonal trust, and consequently increase willingness to respond punitively (Greenberg and West 2008: 303). Greater ethnic or racial diversity is therefore thought to lower the likelihood of abolition of the death penalty (Ruddell and Urbina 2004; Neumayer 2008b; Greenberg and West 2008; Jacobs and Carmichael 2002). It has been suggested that linguistic or religious diversity may have similar consequences (Ruddell and Urbina 2004: 906; Greenberg and West 2008: 297).

The evidence from previous research on the impact of social threat is mixed. Neumayer (2008b) found both economic inequality and ethnic fractionalisation to significantly lower the likelihood of abolition of the death penalty for all crimes, but both effects are insignificant for abolition for ordinary crimes. Ruddell and Urbina (2004) finds an index of population heterogeneity (racial, ethnic, linguistic and religious) to negatively affect the probability of a country having abolished the death penalty, while Greenberg and West (2008) find the effect of both economic inequality and ethnic fractionalisation to not be significantly related to the presence of the death penalty.

- H14: *Abolition of the death penalty is less likely in countries that are ethnically or racially more diverse.*
- H15: *Abolition of the death penalty is less likely in countries that are linguistically more diverse.*
- H16: *Abolition of the death penalty is less likely in countries that are religiously more diverse.*

3.4. Summary of arguments and hypotheses

Table 1 summarises the expected effects of each factor on the likelihood of abolition of the death penalty.

Table 1: Expected effects on abolition of the death penalty

	Expected effect
Political factors	
Democracy	+
Democratic transition	+
Left-wing executive	+
Centrist executive	+/-
Peace years	+
Council of Europe	+
Regional abolition	+
Cultural factors	
Islam	-
Common law	-
Socio-economic factors	
Level of economic development	+
Human development	+
Integration in world economy	+
Economic inequality	-
Racial/ethnic fractionalisation	-
Linguistic fractionalisation	-
Religious fractionalisation	-

Three forms of arguments have been presented concerning the relationship between democracy and the death penalty. Firstly, if capital punishment is seen as a human rights matter, democracies can be expected to be more willing to abolish the death penalty than non-democracies, because democracies are expected to better respect the human rights of their citizens. Secondly, certain principles of democracy, like the equal worth of all citizens, and the possibility of reconciliation among adversaries, are seen as incompatible with the death penalty. Thirdly, governing groups and individuals in democratic countries are willing to accept that there are limits to their powers, and thus they will be more willing to accept limits on the types of punishments that can be used. To sum up, it is expected that a higher degree of democracy will increase the probability of abolition of the death penalty because a

democratic political culture will make people in general less likely to favour the death penalty, and will make decision-makers more likely to initiate or accept abolition. It is also expected that a democratic transition will increase the likelihood of abolition, because this can be seen by the government as a way of distancing the new from the old regime.

Left-wing voters and politicians are generally more likely to favour abolition of the death penalty than right-wing voters and politicians, because of differing views on morality and punishment. Therefore, countries that are governed by left-wing executives are expected to be more likely to abolish the death penalty than countries governed by right-wing executives. The attitudes and behaviour of centrist voters and politicians, however, is not theorised, and expectations regarding the effect of a centrist executive are kept open.

Arguments about the effect of a country's experience with war have taken two forms. Firstly, the experienced risk of war is assumed to be greater when a country has recently gone through a war or war-like situation. In such a situation decision-makers and people in general are expected to be less willing to abolish the death penalty for war-time crimes, since capital punishment can be seen as a necessary tool to protect the existence of society. Secondly, war may lead to the development of a political culture that endorses killing as necessary for the defence of society, a logic that can be extended to those considered as internal enemies, like criminals. Thus, a recent experience with war or war-like situations is expected to change the strategic considerations of both decision-makers and people in general, as well as the political culture in which these considerations are made, in such a manner that abolition of the death penalty for ordinary crimes is less likely. Conversely, as time goes by without war breaking out, these effects are expected to gradually weaken.

As many have come to see the death penalty as a violation of fundamental human rights, abolitionists are often not content with ending capital punishment at home, leading to a lot of pressure being put on retentionist countries. Countries that are more exposed to abolitionist countries can thus be assumed to be more likely to abolish the death penalty. The Council of Europe has been a very important arena for such pressure during the last three decades. Countries that have been members of the Council of Europe during this time are expected to be more likely to abolish the death penalty, because decision-makers in these countries have been exposed to abolitionist pressure. A country is also expected to be more likely to abolish

if the share of countries in the region that have abolished the death penalty is large. In such a situation decision-makers will most likely be exposed to pressure to abolish from their regional peers.

Cultural factors may also influence policy decisions such as abolition of the death penalty, because culture provides values that shape policies. Decision-makers may adopt policies that are influenced by their own values, by the values of their constituents, or both. While religion is essential to the construction of values for people all over the world, Islam is the only religion that is actively used in the debate on the death penalty. Predominantly Muslim countries that retain the death penalty have frequently argued that abolition would be inconsistent with Islamic law and Islam itself. Some researchers, on the other hand, claim that there is no such incompatibility between abolition and Islam, and that the lack of willingness to abolish the death penalty shown by governments in many predominantly Muslim countries in reality is caused by other factors than religion. The analysis will be able to test whether this null hypothesis of no effect holds up. The alternative hypothesis is that a higher percentage of Muslims in the population will lower the likelihood of abolition of the death penalty, because of religiously based values favouring capital punishment held by decision-makers or people in general.

Another element of a country's culture is its historical heritage, which may be reflected in the contemporary organisation of society. A legal system based on English common law is expected to lower the likelihood of abolition of the death penalty. Values of decision-makers and of people in general are believed to reflect the emphasis on individualism in common law, resulting in a moralistic and thus punitive sanctioning system, and consequently a lower likelihood of abolition of the death penalty. Furthermore, the legal system forms the framework within which moves towards abolition would have to take place. The importance in common law traditions of the customs of the people over political leadership is expected to work against abolition, as political leadership has been essential to abolition in most countries where it has been achieved.

It is expected that higher levels of economic development will lead to a higher likelihood of abolition, because of changes in the beliefs of individuals, both those in decision-making positions and the general public. More specifically, people in richer societies are expected to

be less willing to impose “cruel and unusual” forms of punishments, a category to which the death penalty is often argued to belong, and more likely to favour rehabilitation over physical punishments. Similarly, it is expected that a broader measure of human development also will have a positive effect on the likelihood of abolition, because it may be seen as a better measure of the processes that lie behind the effects mentioned above.

Integration in the world economy is expected to positively affect the probability of abolition. A country that is highly dependent on international trade will be very exposed to abolitionist pressure from the governments of abolitionist countries it does business with.

The presence of any of several sources of social threat is expected to lower the likelihood of abolition of the death penalty. People in power, along with the groups in society that they represent, may feel threatened if other groups are experienced as challenging their hold on power. As the death penalty may be used as an instrument of social control, it is less likely to be abolished in such a situation. Furthermore, on the individual level social divisions are expected to reduce interpersonal trust and empathy between social groups, leading to a greater willingness to rely on harsh punishments like the death penalty. Thus, larger economic inequalities, or greater racial, ethnic, linguistic or religious fractionalisation is expected to lower the likelihood of abolition of the death penalty.

4. Methodology: Event history analysis

The previous chapter presented the political, cultural and socio-economic factors that are believed to influence abolition of the death penalty. These hypothesised relationships will be explored quantitatively through event history analysis, more precisely through a series of Cox regressions. The following chapter will discuss these methodological tools.

4.1. *A quantitative approach*

Hypotheses can be tested in a wide variety of ways. The classic divide in social science methods is the divide between quantitative and qualitative studies. Typically, quantitative studies are based on a large number of cases, are variable oriented, and aim at *testing theories* by investigating relationships between variables. Qualitative designs, on the other hand, study one or a few cases and may be *theory generating*, or theories may be *applied* in order to understand or interpret these cases (Ragin 1987; Ragin and Zaret 1983; Ringdal 2001). Advantages of quantitative methods include the ability to study many cases at the same time, to test alternative explanations, openness, the fact that it allows for statistical control, and as a consequence of this, its potential for generalisation. This potential, however, occurs at the expense of complexity, and it is essential to remember that statistical control allows the researcher to make broad statements only because certain simplifying assumptions have been made (Ragin and Zaret 1983; Ragin 1987). The contextual complexity and uniqueness of each case must be renounced as one moves up the “ladder of abstraction” (Sartori 1970) and focuses on more general concepts and causes. A valid operationalisation of these concepts is then essential to the results. Furthermore, although quantitative models can be modified to account for both non-linearity, non-additivity, and a number of other “a-typical” relationship patterns, statistical models will almost invariably present a simplification of the potentially very complex causal patterns of the real world. As a consequence, finding a statistical relationship between variables does not mean that one has established the grounds for accurate explanations or predictions regarding a specific case.

The aim of this thesis is to explore what factors explain abolition of the death penalty worldwide. It does not seek to accurately explain why specific countries abolished the death penalty when they did, and why others retain it, nor does it aim at predicting the future. A quantitative analysis is therefore the natural choice. More specifically, *event history analysis*

is the most suitable tool for analysing the timing and occurrence of an event such as the abolition of the death penalty. The reasons for this will be explained below.

4.2. *Event history analysis*

A lot of research questions in the social sciences are centred on *events*. A demographer may study births, deaths, marriages, divorces and migrations, while a political scientist may focus on riots, revolutions or peaceful changes of government. In each of these examples we see that the *event* consists of some qualitative change that occurs at a specific moment in time (Allison 1984: 9). This concern with events, however, is often linked to an interest in the history preceding the event (Box-Steffensmeier and Jones 2004: 1). The demographer may for instance want to analyse how much time goes by before a marriage ends in a divorce, and the political scientist may study the time in power before governments are forced to resign. In other words, the subject of study is an “event history”. *Event history analysis* provides us with a range of statistical models that are ideally suited for studying event histories.

The goal of this thesis is to study the determinants of death penalty abolition. To do so, event history analysis will be used to model not only whether or not a country abolishes capital punishment, but also the amount of time that goes by before it does so. “The premise of event history analysis is to model *both* the duration of time spent in the initial state *and* the transition to a subsequent state, that is, the event” (Box-Steffensmeier and Jones 2004: 8, emphasis in the original). This is because event history analysis presupposes that the duration spent in a state is related to the likelihood of experiencing some event (that would end this state) (Box-Steffensmeier and Jones 1997: 1421). In other words, it is assumed that countries with a high likelihood of abolition will do away with capital punishment quicker than countries with a lower likelihood, which may remain retentionist throughout the observation period. Event history analysis can furthermore model how independent variables influence the likelihood of experiencing the event. Thus, event history analysis is the ideal tool for studying the determinants of abolition.

The fact that event history analysis allows for studying the determinants of the event of abolition itself constitutes a major improvement over the analytical tools used in most previous quantitative research on the subject. Most of this research has been based on a dichotomy of abolitionist versus retentionist countries, for instance through logistic

regression.²⁸ As Box-Steffensmeier and Jones (1997: 1417) point out, however, an indicator variable cannot capture variation in the duration until event, and these methods are therefore ill suited for research questions where the timing of an event is seen as equally important as its (non)occurrence. Furthermore, the independent variables in these cross-sectional models are only observed at *one* point, and this point will in many cases *not* coincide with the occurrence of the event. As several of the factors that are expected to influence abolition of the death penalty vary over time, their values at the time of observation may be very different from their values at the time of abolition. Thus, analyses based on a dichotomous indicator of the presence or absence of the death penalty are not suitable for studying determinants of *abolition*, as they merely distinguish between countries that have abolished the death penalty up until some point in time and those that have not.

4.2.1. Flexibility of event history models

A wide variety of names are used for this type of models, including *event history models*, *duration models*, *survival models*, *failure-time models* or *reliability models*. This diversity arises from the extensive range of applications for which these models have been used (Box-Steffensmeier and Jones 2004: 2). In the biomedical sciences they have long been used to study *survival times*, for example the length of survival after the onset of a disease or after an operation (Greene 2003: 791). Similar methods have been used by engineers to study the breakdown of machines or components – so-called *reliability* or *failure-time* analysis (Allison 1984: 12). Today, event history models have become popular within many fields of research, including the social sciences. The usefulness and flexibility of event history models can be illustrated by the wide range of subjects that have been explored through such models in articles published in the last few years in the *American Journal of Political Science*, one of the leading journals of political science. These subjects include the duration of peace following civil war (Hartzell and Hoddie 2003), the duration of interstate (Slantchev 2004) or civil wars (Cunningham 2006), the survival of democracies (Kadera, Crescenzi, and Shannon 2003), polity duration (Gates, Hegre, Jones, and Strand 2006), leadership tenure (Colaresi 2004), policy diffusion (Volden 2006), municipal reforms (Ruhil 2003), and

²⁸ Neumayer (2008) is the main exception. Greenberg and West (2008) and Ruddell and Urbina (2004) employ logit models, Jacobs and Carmichael (2002) use a pooled complementary log-log procedure (which is closely related to logit and probit models), Killias (1998) relies on a simple table analysis, and Neapolitan (2001) on discriminant analysis.

American Senate confirmation of presidential nominations of Supreme Court justices (Shipan and Shannon 2003).

4.2.2. Important concepts: *survival*, *risk* and *right censoring*

Research questions that are typically explored through event history analyses involve an implicit interest in *survival*. How long does peace survive before it *fails* (i.e. before war breaks out)? Or how long does the death penalty survive before it is abolished? Closely related to this interest in survival is an equally important interest in *risk*. As some phenomenon persists - or survives - what is the risk that it will subsequently end (Box-Steffensmeier and Jones 2004: 2-3)? If the death penalty has persisted up until a certain point, what is the risk that it will be abolished?

Of course, not all units need experience the event in question within the observation period. For instance, in a study of the duration of civil wars, some civil wars may still be on-going at the end of the period for which one has data. Or, in a study of the abolition of the death penalty, not all countries will have abolished the death penalty by the end of the observation period. (In fact, it seems likely that a sizeable group of countries will retain the death penalty for the foreseeable future.) When a unit reaches the end of the observation period without having experienced the event, it is *right-censored*. One of the great advantages of event history analysis is its ability to handle right-censoring.

4.2.3. Event history data

Since event history analysis involves the modelling of both the *duration until* an event and the *occurrence of this event*, it relies on a set of two dependent variables. Firstly, one dependent variable records the duration of time that goes by before a unit experiences the event (*survival time* or *duration time*). Since not all units necessarily experience the event within the period of observation, a second dependent variable measures whether the unit experienced the event or not. If it did not, and the unit is *right-censored*, the *duration time* variable measures time until the unit exits the sample.²⁹

²⁹ When data are observed multiple times per unit, the dependent variable will in practice take the form of a dummy indicator of whether or not the unit had experienced the event at each observation time. Observations after the first appearance of a “1” (denoting the occurrence of the event) are ignored. The specification, estimation and interpretation of the models are nevertheless exactly the same (Box-Steffensmeier and Jones 1997: 1423), and explanations refer to the dependent variable that measures *duration time* because this approach is closer to the underlying logic of the models.

Independent variables are normally also included in the model when these are believed to be related to the occurrence of the event. They may be fixed, or they may be time-varying.

When all independent variables are fixed, an event history dataset typically consists of one observation representing each unit (e.g. country or individual). When time-varying variables are included, however, data have to be recorded for each unit at each observation period, and the dataset will take the form of a panel.

4.2.4. The logic of event history models

Three concepts are essential to understanding the logic of event history models: the survivor function, the occurrence of an event, and the hazard rate (Box-Steffensmeier and Jones 1997: 1418). The *survivor function*, $S(t)$, expresses the probability that the duration, T , has survived beyond time t , or said differently, the probability that there is no event prior to time t (Cleves, Gould, and Gutierrez 2004: 7):

$$S(t) = P(T \geq t)$$

If we were modelling the survival of democracies, each democracy that remained at the time of observation would be considered a survivor. Thus, another way to think of the survivor function is that it denotes the proportion of units that have survived beyond time t . At the origin time ($t = 0$), $S(t) = 1$, because none of the units have failed yet. As time goes by, more units will fail, and so the survivor function is a decreasing function (or flat, if no units fail) (Box-Steffensmeier and Jones 2004: 13).

Related to the survivor function is the *probability density function*, $f(t)$, which expresses the probability of the event occurring within some differentiable area $[t, t + \Delta t]$:

$$f(t) = \lim_{\Delta t \rightarrow 0} \frac{P(t + \Delta t > T \geq t)}{\Delta t}$$

The area Δt , representing the change in t , moves toward zero, and thus denotes an infinitesimally small change in time. Therefore $f(t)$ can be interpreted as the instantaneous probability of the event occurring at time t (Box-Steffensmeier and Jones 1997: 1418).

The relationship between the probability density function and the survivor function is captured by the *hazard rate*:

$$h(t) = \frac{f(t)}{S(t)}$$

The hazard rate gives the rate at which units fail by time t , given that the unit has survived until t (Box-Steffensmeier and Jones 2004: 14). To see this more clearly, note that the hazard rate can also be expressed as

$$h(t) = \lim_{\Delta t \rightarrow 0} \frac{P(t + \Delta t > T \geq t \mid T \geq t)}{\Delta t},$$

denoting “[...] the rate of failure per time unit in the interval $[t, t + \Delta t]$, conditional on survival at or beyond time t ” (Box-Steffensmeier and Jones 2004: 14).

Most survival analyses model the hazard rate, rather than the survivor rate or the density function. The hazard rate has a very useful interpretation, namely that it reflects the risk a unit incurs at any given moment, provided that the event has not yet occurred (Box-Steffensmeier and Jones 1997: 1419). For instance, a political scientist may ask: What is the risk that a war will break out between two countries today, given that they have stayed at peace up until now? Or in the context of this thesis: What is the risk that a country will abolish the death penalty in any given year? Modelling the hazard rate will provide a means of answering such questions.³⁰

The hazard rate can vary between zero (indicating no risk at all) and infinity (indicating the certainty of failure at that instant). Over time, the hazard rate may remain constant, increase, decrease, or take on more complicated shapes. For instance, the human mortality pattern related to aging is often referred to as the “bathtub hazard”, since the hazard falls for a while after birth, stabilizes for many years, and then rises constantly with old age (Cleves et al.

³⁰ In fact, the hazard rate will not be modelled explicitly in this thesis, as the interest lies in exploring how the independent variables affect the risk of abolition (i.e. the hazard rate) rather than in the size of that risk at any particular point in time. Focus will therefore be on how to interpret coefficients rather than the size and shape of the hazard rate.

2004: 8). Expectations regarding the shape of the hazard function are decisive when choosing the right event history model. This subject will be covered below, after a presentation of the interpretation of the results of an event history analysis.

4.2.5. Interpretation of coefficients and hazard ratios³¹

Coefficient estimates reveal information about changes in the hazard rate associated with changes in the corresponding variables. Positive coefficients indicate that the hazard rate (and the risk of the event) increases with an increase in the corresponding variable, while negative coefficients indicate a decrease in the hazard rate following an increase in the corresponding variable. When the coefficient is exponentiated, it shows the *ratio* of the hazard rates for a one unit change in the corresponding variable (Cleves et al. 2004: 123). Thus, a coefficient of for instance .5 reveals that a one point increase in this variable increases the hazard rate by 65 percent. This is because $\exp(.5) = 1.65$, and $(1.65 - 1) * 100 = 65$ percent. Conversely, a coefficient of -.5 shows that a one point increase in this variable lowers the hazard rate by 39 percent, because $\exp(-.5) = .61$, and $(.61 - 1) * 100 = 39$ percent.

This interpretation in terms of hazard *ratios* is in fact so useful that STATA reports them by default, and the analyst has to explicitly request coefficients if he or she wants non-exponentiated results. The analysis chapter of this thesis will also report hazard ratios, and their interpretation. Understanding the difference between hazard *ratios* and hazard *rates* is essential if one wants to understand event history analysis, and so the difference bears repeating. The hazard *rate* gives the rate of failures (events) at one specific point in time, and can be interpreted as reflecting the “risk” of experiencing the event that a unit incurs.³² The hazard *ratio* is the ratio of the hazard rates from a one unit increase in the independent variable, and thus reflects the *change* in the risk that an increase in the independent variable brings about.

³¹ The following discussion regarding interpretation of coefficients and hazard ratios refers to the results of a *Cox proportional hazards model*. The interpretation for other models may differ somewhat, but will not be discussed here.

³² When referring to the exact size of effects, the terms *hazard* or *hazard rate* will be used, for example if saying that a one point increase in a variable raises the hazard rate by 50 percent. I will, however, also refer to the effect that variables have on the *risk* of abolition, when speaking more generally about effects. When the discussion is further removed from the purely statistical concepts, I will also use the term *likelihood*. This is to avoid the negative connotations that the term *risk* brings with it.

To illustrate the interpretation of hazard ratios I will use the results of an event history analysis of challenger entry in the 1990 elections to the US House of Representatives, as reported by Box-Steffensmeier and Jones (2004: 104-105). Data are recorded for each incumbent running for a new period, and the dependent variable measures the duration (in weeks) from the start of a campaign cycle until the emergence of a challenger to that incumbent. A dummy variable that indicates whether or not the congressional district is in the South (equals one if in the South, zero if not) is included, and its estimated hazard ratio equals .64. Since hazard ratios are interpreted relative to one, this means that incumbents from the South are less likely to be challenged, and thus more likely to enjoy a race without a challenger for a longer time period. More precisely, Southern incumbents face a 36 percent lower risk of being challenged than non-Southerners.³³ A variable recording the percentage of votes received in the previous election is also included, with an estimated hazard ratio of approximately .93. This indicates that incumbents that did well in the last election are less likely to be challenged than incumbents that did less well. More precisely, two incumbents that differ by one percentage point in votes from the last election, and that have the same values for the other independent variables, will face hazard rates that differ by around seven percent. The prime issue in this analysis is however to test whether war chests (campaign finance reserves) deter challenger entry. War chests will vary throughout the campaign, and therefore this variable (measured in \$100,000) changes over time for each incumbent. The estimated hazard ratio is .74, indicating that an increase in an incumbent's war chest of 100,000 dollars will lower the risk of challenger entry with 26 percent.

4.2.6. Interaction effects

When interactions terms are included in the model, interpretation and significance testing is no longer straight forward. As interaction terms will be included in the analysis, a short discussion of these subjects is needed. Interaction terms are introduced to statistical models when the effect of one variable is hypothesised to differ across different values of another variable. The inclusion of squared terms is one special case of interaction where a variable interacts with itself so that its effect depends on its own level (Kam and Franzese 2007: 32). Although the following discussion will deal with interaction between *different* variables, the same approach is valid for squared terms.

³³ Because $(.64 - 1) * 100 = -36$.

In linear models, the effect of an independent variable is given by its coefficient. In interactive models, however, each variable that is involved in the interaction terms has multiple effects, depending on the levels of the other variable(s) with which it interacts (Kam and Franzese 2007). Say that a variable *x* is believed to influence the hazard rate, but that this effect is believed to be conditional on the value of a second variable *z*. An example from the analysis of this thesis will be used for illustration. As will be explained later, there are indications that the effect of a legal system based on common may vary over the course of the observation period. The effect of common law on the risk of abolition can thus be expressed as: $\beta_c \text{common law} + \beta_{ct} \text{common law} * \text{analysis time}$. The effect of common law on the hazard rate in this model depends on *both* coefficients (β_c and β_{ct}), as well as on the value of *analysis time*.³⁴ Thus, the coefficient β_c can be interpreted as giving the effect of *common law* only when *analysis time* equals zero (because if *analysis time* = 0, the whole term $\beta_{ct} \text{common law} * \text{analysis time}$ disappears from the equation), which in fact falls outside the range of observed values for *analysis time*. In this example, where the primary interest is in the effect of *common law*, but where this effect is believed to be conditioned by a second variable *analysis time*, an effective way of presenting the results would be to give the effect of a one unit increase in *common law* at different values of *analysis time* (Kam and Franzese 2007).³⁵

The same logic that applies to judgments about the effects of variables that are involved in interaction terms also has to be used for assessing the statistical significance of these effects. In the words of Kam and Franzese (2007: 43), “[j]ust as the effects of variables involved in interactive terms depend upon two (or more) *coefficients* and the values of one (or more) other variable(s), so too do judgments of uncertainty surrounding those effects”. Continuing the example from above, the significance level of the coefficient β_c refers to the statistical significance of the effect of *common law* when *analysis time* equals zero, and does not allow for valid inferences about the statistical significance of *common law* at other points in

³⁴ The effect of *analysis time* in this model is only the effect it has in altering the impact of *common law*. The term $\beta_{ct} \text{analysis time}$ is therefore not included in the model.

³⁵ The hazard ratio for a one unit change in *x* at different values of *z* is given by $\exp [\beta_x + \beta_{xz}(z)]$ (Hosmer and Lemeshow 1999: 135).

analysis time. *Likelihood ratio tests* will therefore be used to assess whether or not the total effect of a variable that is involved in an interaction term is statistically significant.³⁶

4.3. Applying an event history model to an analysis of abolition

This chapter has argued that event history analysis is the most suitable tool for studying the determinants of death penalty abolition, and has presented its logic and interpretation. The remaining part of the chapter will go into the specifics regarding how an event history model can be applied to the data at hand. This will include a discussion of the specific model chosen, its assumptions, and lastly a brief overview of some details regarding the running of the analysis.

4.3.1. Choosing event history model

A wide variety of models fall under the heading of *event history analysis*. The analyses of this thesis will be based on *Cox proportional hazards* models. This is a *semi-parametric, continuous time* event history model. The arguments behind this choice, and the alternatives that were rejected will be discussed below.

Two main subcategories of event history models can be distinguished: *discrete time* models and *continuous time* models. Discrete time models presume that the event can only occur at discrete, often predetermined times (for instance election day). However, in many social processes change may occur at any time. Such processes are called *continuous time* processes (Box-Steffensmeier and Jones 1997: 1423). Abolition of the death penalty can occur at any time, and a continuous time model is therefore used in this thesis.³⁷

Among continuous time models, three classes of event history models can be distinguished: *non-parametric*, *parametric* and *semi-parametric* models. There are three reasons why a semi-parametric model is preferred over a non-parametric or a parametric model in this analysis.

³⁶ The partial likelihood ratio test is calculated as twice the difference between the log likelihood for the model containing the variables and the log likelihood for the model without the variables. This statistic follows a Chi-square distribution, which can be used to test the overall statistical significance of the variables in question (Hosmer and Lemeshow 1999: 98-99, 121).

³⁷ Whereas abolition can occur at any time, the data only record the year in which abolition took place. This is because accurate abolition dates are not readily available for all countries, and because information on the time-varying independent variables is only available on a yearly basis.

Firstly, since the purpose of the analysis is to explore how various factors influence abolition of the death penalty, a non-parametric model cannot be employed. Non-parametric event history analysis “[...] follows the philosophy of letting the dataset speak for itself”, and make no assumptions about how independent variables influence the hazard, nor about how the hazard behaves over time (Cleves et al. 2004: 91). Non-parametric models can be used to estimate the probability of survival past a certain point in time, or to compare survival experiences across the groups of a variable that is qualitative in nature (Cleves et al. 2004: 5).³⁸ However, because no assumptions are made, the effects of independent variables cannot be modelled in non-parametric analysis, making it unsuitable for the purposes of this thesis.

Secondly, the aim of this thesis is *not* to model the duration dependency of the abolition process. For some research questions, the researcher may have grounds for expecting the hazard function to take on a specific form. For instance, democracies can perhaps be expected to face lower risks of failure the longer they have already survived. By specifying a distributional form for the baseline hazard rate, such time dependency can be explicitly accounted for (Box-Steffensmeier and Jones 1997: 1427). The baseline hazard rate can be understood as “[...] the time path that durations follow if the effects of all [independent variables] are zero” (Box-Steffensmeier and Jones 1997: 1427). In other words, it reflects time dependence (or independence). Models where the distributional form of the baseline hazard has been specified (parameterised) are called *parametric models*.³⁹

Parametric models are therefore a natural choice if one wishes to study the effects of independent variables and at the same time make explicit inferences regarding duration dependency. An additional advantage is the ability to predict beyond the observation period (Box-Steffensmeier and Jones 2004: 85-86). The drawback is of course that there for many research questions will be little information on which to base the choice of parameterisation (Allison 1984: 33), and furthermore that this (perhaps arbitrary) choice of parameterisation may substantially influence the results (Box-Steffensmeier and Jones 1997: 1432).

³⁸ For instance, Ruhil (2003) uses non-parametric event history analysis to see how the rates at which American cities reformed their municipal system accelerated over time.

³⁹ There are numerous different distributions to choose from. For instance, the exponential model is based on the assumption that the hazard rate is invariant to time, while the Weibull distribution can also handle monotonically increasing or decreasing hazards. The log-logistic and log-normal models allow for non-monotonic hazard rates (Box-Steffensmeier and Jones 2004).

Neither the theoretical background nor previous research on abolition of the death penalty suggests any specific form of duration dependency for the hazard of abolition. Furthermore, the focus of this thesis is not to explore the duration dependency of this process, but rather to test the hypothesised effects of a range of independent variables on the hazard of abolition. Using parametric models in such a situation would risk distorting the results by applying an arbitrary distribution to the data.

Thirdly, standard parametric models are badly equipped to handle data with a lot of ties, that is, data where multiple units experience the event at the same time (Box-Steffensmeier and Jones 2004: 53). There are relatively many occurrences of tied events in my data, although there are no extreme cases, and the maximum number of countries that abolish the death penalty at the same time is four.⁴⁰ Although the partial likelihood method, on which the Cox model is based, cannot handle ties, the likelihood function can be modified to do so. Therefore, the Cox model has no problems when data include a lot of ties.

Semi-parametric event history analysis can model the effects of independent variables, but still avoid having to specify the form of the time-dependency. They are parametric in the sense that the effect of the independent variables is assumed to take a certain form, but they are non-parametric in the sense that no assumptions are made about the distribution of time to event (Cleves et al. 2004: 5).

The *Cox proportional hazards model* (Cox 1972) is by far the most popular of the semi-parametric models. Allison (1984: 35) goes so far as to say that “[i]n the judgment of many, [the Cox model] is unequivocally the best all-around method for estimating regression models with continuous-time data.” The Cox model assumes that the independent variables multiplicatively shift the baseline hazard function. The baseline hazard is given no particular parameterisation, and is in fact left unestimated. Whereas no assumptions are made about the shape of the hazard over time, whether it is constant, increasing, decreasing or takes on more complicated forms, it is assumed that whatever the shape, it is the same for everyone (Cleves et al. 2004: 121). This is the *proportionality assumption* that Cox regression rests on, which requires that the effect of an independent variable is to shift the hazard by a factor of

⁴⁰ Note that countries with tied events have not necessarily abolished the death penalty *in the same year*, since analysis time is measured either from 1960 *or* from time of independence, if that occurred later. This will be explained in relation with the operationalisation of the dependent variable.

proportionality, and that the size of that factor remains the same irrespective of when it occurs. In other words, the effect of an independent variable is assumed to be the same over time. If, on the other hand, a variable for instance has a strongly positive effect early on in the period, but this effect weakens and perhaps even turns negative as time goes by, the proportionality assumption does not hold. This may result in biased coefficient estimates and reduced power of significance tests (Box-Steffensmeier, Reiter, and Zorn 2003; Box-Steffensmeier and Zorn 2001).

Estimates of the parameter values are obtained through *maximum partial likelihood* estimation. This method assumes that the intervals between successive failure times do not contribute any information regarding the relationship between independent variables and the hazard rate. This must be so because the baseline hazard function is not directly parameterised, and therefore it is the *ordered failure times* rather than the intervals between them that contribute information (Box-Steffensmeier and Jones 2004: 51). The constant term (intercept) is absorbed into the baseline hazard, and because this is not estimated, the Cox model has no constant term (Cleves et al. 2004: 123).

4.3.2. The assumptions underlying a Cox model

As mentioned before, Cox regression rests on the assumption that hazards are proportional over time. In other words, the effects of independent variables are assumed to be constant over time. When the effect of a variable in reality changes depending on when it is observed, this can result in biased estimates and decreased power of significance tests, potentially affecting *all* variables, and not only the one that has a non-constant effect (Box-Steffensmeier and Zorn 2001). Although the theoretical background does not indicate any non-constant effects among the factors that are believed to influence abolition of the death penalty, this possibility cannot be excluded. Among the possible ways of testing for non-proportionality, Box-Steffensmeier and her colleagues recommend residual-based tests as the best approach (Box-Steffensmeier and Zorn 2001; Box-Steffensmeier et al. 2003). The details of these tests will not be covered here, but the general intuition is that, if non-proportionality is present, residuals will vary significantly with time. The most common test is to examine the correlation between scaled Schoenfeld residuals and analysis time. Given that hazards are proportional, this correlation should not be significantly different from zero (Box-Steffensmeier et al. 2003: 36). Tests based on Schoenfeld residuals can be calculated both for the model as a whole (global tests) and for each independent variable. Such tests are

run on all eight models that are included in my analysis.⁴¹ Global tests that examine the proportionality of the entire model indicate nonproportionality in two of the models. The global tests for these two models are significant only at a ten percent level. This is nevertheless taken as an indication that there may be a problem with nonproportionality. As Box-Steffensmeier and her colleagues point out, one should not only examine the global tests, but also the variable-specific tests to identify potentially problematic variables (Box-Steffensmeier et al. 2003). In both of these models, the variable-specific tests indicate that it is the dummy variable identifying a legal system based on English *common law* that is the source of the problem, with chi²-values far higher than any of the other variables. The tests also indicate that the effects of the *common law* variable are non-constant in two of the other models.

The most widely recommended approach when faced with non-proportional hazards is to estimate a standard Cox model while including interaction effects between the problematic variable(s) and some function of analysis time (Box-Steffensmeier and Zorn 2001).⁴² Therefore, in the four models where the Schoenfeld tests indicate (with 95 percent confidence) that the effect of *common law* varies over time, a second variable, where the common law indicator is interacted with the number of years that have passed since the country entered the analysis, is included alongside the *common law* variable.⁴³ New Schoenfeld tests show that neither of the models now shows evidence of non-proportionality at the model level.⁴⁴ Appendix A discusses other tests that have been run on the data.

4.3.3. Details on the running of the analyses

All analyses are run with STATA (version 9.2).⁴⁵ Robust estimation of the standard errors is used to account for temporal dependence among the observations. When data consist of repeated observations of the same country over time, observations within each country may

⁴¹ See Table 8 in Appendix A for the results of the Schoenfeld tests.

⁴² A second approach is to use different Cox models for different time intervals (Box-Steffensmeier and Zorn 2001). However, dividing up the time scale in this manner will often have to rely on very arbitrary choices, and in the context of my analyses it does not seem justifiable.

⁴³ The variable-specific tests indicate significant non-proportionality in other variables than *common law* as well. However, none of these are serious enough to result in significant global tests. Furthermore, none are significant across as many models as *common law*. It will therefore be left to future research to explore whether any of the other factors that influence death penalty abolition do so in a non-proportional manner, as this is outside the scope of this thesis.

⁴⁴ Schoenfeld tests for the final models are presented in Table 4 and Table 5 in Chapter six.

⁴⁵ Cleves, Gould and Gutierrez (2004) provide an excellent guide to event history analysis using STATA.

reasonably be expected to be temporally dependent. This breaches the assumption of independence of units. Robust estimation relaxes the assumption of independence among observations, and usually results in larger estimates of the standard errors than non-robust estimation. The coefficients are not affected (Box-Steffensmeier and Jones 2004: 114-115).

The partial likelihood method, on which the Cox model is based, cannot handle ties in the data. Recall that ties occur when more than one unit experience the event at the same time. This is the case in the data that this analysis is based on, as several countries are recorded as abolishing the death penalty at the same time. The partial likelihood method can, however, be modified to handle tied data, and there are several different methods available. The Efron method is used to handle tied events in this analysis. While the Breslow method is most common, Efron is more accurate when the number of tied failures increases (Box-Steffensmeier and Jones 2004: 55).

5. Data and variables

5.1. Data and operationalisation of abolition

The following section will discuss the various issues that influence sample selection. The operationalisation of abolition of the death penalty will also be addressed, as this is closely linked to sample selection in event history data.

5.1.1. Sample selection

The data on which the analyses of this thesis are based cover the years from 1960 to 2004. The start and end points have been determined by access to data. 145 countries are covered. The starting point was to include all independent and internationally recognised states in the dataset.⁴⁶ States have only been included while they have existed in their present form, so that federations are not included when these at a later point have been split up into smaller constituent parts. For instance, Yugoslavia is not included prior to its dissolution in 1991, but from that year, the states that were formerly part of the federation are included. Previous colonies are included from the year of their independence, if this occurred after 1960.

As in all quantitative studies, access to data has influenced the final sample on which the analysis is based. One of the major restrictions is the fact that the Polity project, which serves as the source of the important variable on democracy, only provides data for states with a population of 500 000 or more (Marshall, Jaggers, and Gurr 2008), excluding many small states from the sample.

Research that is based on event history data may run into a complication regarding sample selection that is unknown for other types of analysis: *left-censoring*. As mentioned before, *right-censoring* occurs when a unit does not experience the event within the observation period. *Left-censoring*, on the other hand, occurs when a unit experiences the event *before* the start of the observation period (Cleves et al. 2004: 34). Since some countries in the world abolished the death penalty before 1960, left-censoring is an issue in these data.

⁴⁶ This has been operationalised as UN member states as of the end of 2004 (United Nations 2008b).

Countries that abolished the death penalty before 1960 have been omitted from the data. This is decidedly the most common solution to the problem of left-censoring, although the dropping of potentially important cases may introduce bias in the analysis. As Mooney and Lee (2000) point out, a second possibility exists: one can include these cases and code them as having experienced the event in the first year of the analysis period. With this solution one risks bias in the estimated results if the values of the independent variables are different in the first year of observation (when the country is coded as having experienced the event) from their values in the actual year of the event. Due to this potential for very serious bias, this solution was discarded.⁴⁷ The same logic has led to the omitting of countries where the death penalty was abolished before independence or while the country was part of a now dissolved federation.

Thus, the sample represents the population of countries in the world *that had not abolished the death penalty by the end of 1959*. Although this is not a random sample of all countries in the world, it is deemed to be the best solution, as it is impossible to extend the dataset back long enough to be able to observe the earliest abolitions, which took place in the nineteenth century. Since the sample is not a random selection of the countries of the world, statistical testing will not be used to generalise about abolition of the death penalty in all countries. Instead the significance tests are interpreted as indicating the certainty with which we can disregard the possibility that the results have been produced by random measurement errors and coincidence.⁴⁸

⁴⁷ As will be discussed in the next chapter, however, the analyses have been run on data where all left-censored countries were included and coded as having abolished the death penalty in their first year of observation. It does not appear as if the choice between omitting or including left-censored countries has major implications for the findings.

⁴⁸ According to a classical view, significance testing has no meaning when the sample has not been drawn randomly, as one cannot statistically generalise from a non-random sample to the population sampled (Henkel 1976: 76). However, Henkel (1976) provides two alternative interpretations of significance testing that are relevant to this analysis. Whereas in the classical view it is assumed that the sampling process is the only source of randomness in the data, these alternative views identify other potential sources of randomness for which significance tests may be productively applied. The first interpretation is that randomness in the data may stem from random measurement errors. This is certainly a possibility in this analysis, as mistakes can have been made both in the initial data collection and dissemination, as well as in the process of assembling my dataset from its many sources. A significant result in this interpretation means that the results are not explained by random measurement errors. The second possible interpretation is that the data may have been generated by some unspecified random process. This can be seen as a possibility in any analysis. A significant result would in this case indicate that it is some causal factor, and not pure chance, that has produced the results.

As will be addressed below, abolition is operationalised in two different ways in these analyses: as abolition of the death penalty *for all crimes*, or as abolition of the death penalty *for ordinary crimes*. The use of two operationalisations of the event, in combination with the presence of left-censoring, means that the analyses have to be based on two different datasets. The operationalisation of abolition determines how many and which countries that are omitted because they experience abolition before the start of the observation period. The analysis of abolition of the death penalty *for all crimes* is based on a dataset of 145 countries, excluding all countries that abolished capital punishment *for all crimes* before 1960 or before independence. The analysis of abolition *for ordinary crimes* is based on a corresponding dataset of 134 countries. Table 9 in Appendix B gives an overview of the countries included in the datasets.

5.1.2. Time until abolition of the death penalty

The aim of this thesis is to analyse the determinants of death penalty abolition. More precisely, the dependent variable measures how much time that elapses from a country enters the sample, and thus becomes *at risk* of abolition, until the death penalty is abolished, if abolition occurs at all. Most countries enter the analysis at the start of the observation period, in 1960. As explained above, however, countries that become independent after 1960, only enter the sample in the year of independence. Thus, the speed of the abolition process is modelled in terms of *analysis time* (t). This differs from *secular time* because countries may enter the analysis in different years. For instance, both Austria and Ukraine abolished the death penalty for all crimes in their ninth year after entering the analysis (at $t = 9$). However, while Austria abolished capital punishment in 1968, Ukraine only did so in 1999. The reason for this difference is of course that Ukraine did not enter the analysis until 1991, after the dissolution of the Soviet Union.

The second step in operationalising the dependent variable is to specify what the *event* consists of. This involves defining and operationalising *abolition of the death penalty*. Amnesty International (2008a) categorise countries into four different groups according to their practices regarding the death penalty: 1) Countries that are *abolitionist for all crimes*, that is where the laws do not provide for the death penalty for any crime. 2) Countries that are *abolitionist for ordinary crimes*, where the laws provide for the death penalty only for so-called “exceptional crimes”, such as crimes under military law or crimes committed in exceptional circumstances. 3) Countries that are considered to be *abolitionist in practice*, or

de facto abolitionist. These countries retain the death penalty for ordinary crimes such as murder, but have not executed anyone in the past ten years and are believed to have a policy or established practice of not carrying out executions. 4) *Retentionist* countries that retain and use the death penalty for ordinary crimes.

My analysis is based on a categorisation of countries according to whether or not the death penalty is provided for by law. De facto abolition is not analysed for three reasons: Firstly, it is a vague category, and it is not always clear from which point of time a country shall be categorised as de facto abolitionist. Secondly, while Amnesty International provides a list of countries that are considered as de facto abolitionist at the present date, no data exist that list de facto abolitionist countries in each year of the period under analysis (Neumayer 2008b: 255). Thirdly, while de facto abolition previously has been seen as a step towards judicial abolition of the death penalty, it has become clear that it cannot be assumed that an extended period of time without executions will build up a form of taboo that will preclude their resumption (Hood 2002: 12-13). According to Hood (2002: 13), between 1994 and 2002, ten countries that were considered as de facto abolitionist resumed executions.

As a consequence, de facto abolitionist countries are categorised as retentionist. Thus, the retentionist category includes countries with quite different practices regarding the death penalty, from countries that have not executed anyone in a long time, to those that use the death penalty habitually. Furthermore, the crimes for which capital punishment may be imposed vary greatly across countries. Extrajudicial killings are not considered in the analysis.

Thus, a variable for *death penalty status* was created, distinguishing between 1) countries that retain the death penalty, 2) countries that have abolished the death penalty for ordinary crimes, but that retain it for “exceptional crimes”, and 3) countries that have abolished the death penalty for all crimes. Information on death penalty status and times of abolition was gathered from Amnesty International (2008a; 2008b; 2008c), and complemented by information from Hood (2002) when needed.⁴⁹

⁴⁹ In the few instances where Hood (2002) and Amnesty International (2008a; 2008b; 2008c) contradict each other, the information from Amnesty International was given preference.

This means that there are two different versions of the dependent variable measuring duration in the analysis. In the analysis of the determinants of abolition of the death penalty *for all crimes* it measures the number of years that go by from 1960 (or from independence) until a country abolishes the death penalty *for all crimes*, if it does so. In the analysis of the determinants of abolition of the death penalty *for ordinary crimes* the dependent variable consists of the time that goes by until a country abolishes the death penalty *either for ordinary or for all crimes*, whichever happens first.

Using two different operationalisations of death penalty abolition will allow for testing whether any of the independent variables affect abolition differently in its two forms. It may seem unimportant whether or not a country retains the death penalty for so-called extra-ordinary circumstances, since such circumstances in reality occur relatively rarely. Schabas (2002: 369), however, has warned against such logic, claiming that the risk of misuse of the death penalty is greatest in times of war. Whether or not this is true, it is interesting to see if there are any indications that countries that abolish the death penalty for ordinary crimes differ from those that abolish it completely. However, when using this analysis for such inferences, there are two things that must be kept in mind. Firstly, the samples differ somewhat for the analyses of the two forms of abolition. Secondly, abolition *for all crimes* and abolition *for ordinary crimes* are not in fact analysed separately, since countries that have abolished the death penalty *for all crimes* are coded as abolitionist in both operationalisations. Thus, the analysis will only be able to give indications, not statistical evidence, of differing effects.

The United States is a special case in terms of coding the status of the death penalty, since each state to a large extent is free to decide whether to abolish or retain the death penalty, and 15 jurisdictions in fact have abolished the death penalty (Amnesty International USA 2008). The US is nevertheless coded as retentionist, since 36 states and the federal and military jurisdictions retain the death penalty (Amnesty International USA 2008; Hood and Hoyle 2008). A few countries have abolished the death penalty only to reinstate it. One example is the Philippines, which became the first Asian country in modern times to abolish the death penalty in 1987, but reinstated it in 1993 (Amnesty International 2006). For these countries, the period of abolition is ignored, and the Philippines is recorded as a retentionist

state throughout the analysis period.⁵⁰ However, it is very rare for countries that have legally abolished the death penalty to reinstate it (Neumayer 2008a: 4). In fact, by the end of 2007, 76 countries were barred from reintroducing capital punishment through the ratification of abolitionist treaties, and a further six had signed but not ratified these treaties (Hood and Hoyle 2008: 23). Thus, the process of death penalty abolition is to a very large degree a unidirectional process, which allows for employing a single-spell model such as this.⁵¹

Table 2 shows the number of countries included in the datasets, the number of countries that abolish the death penalty during the observation period, and the average number of years that go by before abolition for the countries that do abolish.

Table 2: Overview of the datasets

Analysis of abolition of the death penalty for ...	Number of countries	Number of abolitions	Average number of years until abolition
... all crimes	145	49	24.7
... ordinary crimes	134	49	22.9

5.2. Operationalisation of the independent variables

The following section will present the operationalisation of the factors that were hypothesised to influence abolition in Chapter three. Descriptive statistics are presented in Table 3. Table 10 in Appendix B presents details on the sources of each variable. Appendix B also presents further details on some of the variables when this is necessary for a complete understanding and judgement.

⁵⁰ Likewise, the United States is recorded as retentionist throughout the period, including the years from 1972 to 1976, when there was a moratorium on all executions. This period is not comparable to the period of abolition in for instance the Philippines, though, as the Supreme Court did not hold that the death penalty was unconstitutional per se. Rather it held that it was the arbitrary and discriminatory manner in which it was applied that violated the constitution. Thus, 36 of the 38 previously retentionist states redrafted their death penalty statutes to comply with the Supreme Court ruling, and these statutes were ruled constitutional in 1976, effectively bringing capital punishment back into use (Hood and Hoyle 2008: 113).

⁵¹ Single-spell models assume that a unit can only experience one event of the same kind, as opposed to models with repeated events (Box-Steffensmeier and Jones 2004: 10).

Table 3: Descriptive statistics

	Variable type	Min.	Max.	Mean	Std.dev.	Obs. N
Political variables						
Democracy (Polity score)	Numeric	-10	10	-1.30	7.28	4931
Democratic transition	Dummy	0	1	.03	.17	4931
Left-wing executive	Dummy	0	1	.56	.50	1784
Centrist executive	Dummy	0	1	.09	.29	1784
Peace years	Numeric	0	59	13.92	13.63	4931
Council of Europe	Dummy	0	1	.04	.20	4931
Regional abolition	Numeric	0	5.74	.72	1.13	4931
Cultural variables						
Islam	Numeric	0	100	32.28	38.79	4931
Common law	Dummy	0	1	.34	.47	4931
Socio-economic variables						
Level of ec. dev. (ln. gdp pc)	Numeric	4.03	10.91	7.13	1.52	4197
Human development (HDI)	Numeric	23.20	94.90	61.86	18.06	2654
Integration in world ec. (ln. trade)	Numeric	.43	6.07	3.96	.63	4189
Economic inequality (GINI)	Numeric	15.90	73.30	41.61	10.14	2162
Ethnoling. fractionalisation	Numeric	.21	92.64	45.72	25.87	4931
Religious fractionalisation	Numeric	.23	86.03	42.92	24.42	4931

Descriptive statistics run on largest sample from analysis of abolition of the death penalty *for all crimes*.

5.2.1. Political factors

Level of *democracy* is measured by a country's *polity* score (Marshall, Jaggers, and Gurr 2007). The Polity IV Project provides measures of authority characteristics for all major states in the world, and has become the most widely used source of data on regime characteristics (Marshall et al. 2008). Central to the Polity conceptual scheme is that it “[...] examines *concomitant qualities of democratic and autocratic authority* in governing institutions, rather than discreet and mutually exclusive forms of governance” (Marshall et al. 2008, emphasis in the original). Separate scores for democracy and autocracy⁵² are calculated, based on evaluations of the competitiveness and openness of executive recruitment, constraints on the chief executive, competitiveness of political participation, and regulation of participation. Both scores range from 0 to 10. Since it is seen as possible for countries to exhibit a mix of both of these authority patterns, the *polity* measure is created by subtracting the autocracy from the democracy score. This measure ranges from +10 (full democracy) to -10 (full autocracy) (Marshall and Jaggers 2005).⁵³

⁵² The researchers behind the Polity project see the term *authoritarianism* as a pejorative term when used in Western political discourse, and use the more neutral term *autocracy* instead (Marshall and Jaggers 2005).

⁵³ The *polity2* variable, on which my measure of democracy is based, is a modified version of *polity*, where transitional codes are recoded into the -10 to +10 scale (Marshall and Jaggers 2005: 15-16).

A dummy variable identifying *democratic transitions* is based on information from the Polity IV Project's measure of regime transitions (*regtrans*). The Polity regime transition variable is based on changes in the *polity* score, and ranges from +3 to -2. It distinguishes between a major (+3) or a minor democratic transition (+2), a positive regime change (+1), little or no change in the *polity* score (0), and a negative (-1) or an adverse regime transition (-2) (Marshall and Jaggers 2005). The dummy variable *democratic transition* equals one for minor or major democratic transitions (categories two and three of the Polity project's *regtrans* variable), and zero for all other values of *regtrans*.⁵⁴

Neumayer (2008b) also bases his measure of democratic transitions on Polity's regime transition variable, but he uses the variable in an unmodified form. In my view, there are both methodological and theoretical concerns that indicate that it may not be optimal to include this variable in an unaltered form when analysing the effect of democratic transitions. Most importantly, Polity's *regtrans* variable is not a measure of democratic transitions, it is a measure of regime change in general, both positive and negative changes. And, while the theory leads to expectations that a democratic transition will increase the likelihood of a country abolishing the death penalty, in my view it does not provide grounds for expecting a linear relationship between regime change and the probability of abolition. For instance, in my opinion there is no theoretical foundation for expecting the difference between an adverse and a negative regime change (categories -2 and -1, respectively) to cause the same change in the risk of abolition of the death penalty as the difference between a positive regime change and a minor democratic transition (categories +1 and +2).

Furthermore, even if one does expect regime change in general to influence the likelihood of abolition of the death penalty in a linear manner, the six-point regime change measure is characterised by several methodological weaknesses. The variable is constructed in such a manner that it in my view may be difficult to claim that the categories are equally spaced on some underlying scale (see Appendix B for details on the categories). As a consequence, it may not make sense to assume that a one point increase represents the same change in regime characteristics irrespective of where on the scale that increase occurs. In other words,

⁵⁴ The measure of *democratic transitions* will be included alongside the measure of *level of democracy*, although the two are related. This is because the transition measure is not a simple calculation of change in the *level of development*, its coding is more complicated than that. Thus the measures are not so closely related that it should stand in the way of including the two alongside each other. As will be seen, correlation between the two is low, with a correlation coefficient of approximately .1.

the variable is only measured at an ordinal level (Ringdal 2001: 173). While it is not uncommon to use ordinal variables in statistical analyses, doing so in this particular case is in my opinion not optimal. Moreover, the variable is not balanced around its central category (no change in *polity* score), with three categories representing positive regime changes and only two denoting negative changes. The variable also has relatively little variation, with 90 percent of the country-years in my sample displaying little or no change in regime characteristics (category 0).

The measures for the political orientation of the executive are based on data from the World Bank's *Database of Political Institutions* (Beck, Keefer, Clarke, Walsh, and Groff 2007). The World Bank variable (*execrlc*) categorises the party of the chief executive as either *right*, *left* or *centre*, based on the content of the party names (Keefer 2005). Two dummies are created, one for *left-wing executives* and one for *centrist executives*, with right-wing executives as the reference category. As mentioned during the theoretical discussion, my approach to studying the effects of the political orientation of the executive differs somewhat from previous research. Whereas previous studies (Greenberg and West 2008; Neumayer 2008b) have placed centrist and right-wing executives in the reference category, indicating an interest in left-wing executives compared to all others, I use separate dummy variables for left-wing and centrist executives. This allows for testing the effects that centrist governments may have on abolition of the death penalty. The *Database of Political Institutions* is only available from 1975 and onwards, and *left-wing executive* and *centrist executive* are therefore only included in analyses of samples representing the period from 1975 to 2004.

Experience with war and war-like situations is measured through the variable *peace years*, which counts the number of years that have gone by since the country was last involved in an armed conflict. Data for armed conflicts are taken from the *Armed Conflict Dataset* collected by the International Peace Research Institute, Oslo, in collaboration with the Department of Peace and Conflict Research at Uppsala University (UCDP and PRIO 2007). An armed conflict is defined as “[...] a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths” (Harbom, Högbladh,

Buhaug, Carlsen, and Ormhaug 2006: 4). The variable *peace years* counts the number of years since a country is observed to have been involved in an armed conflict.⁵⁵

As mentioned above, it seems likely that the effect of a recent experience with war will not go away overnight when the war ends, and that it may take some time before the positive effect of an additional peace year comes into force. Tests have therefore been run to check whether the inclusion of a squared version of *peace years* contribute significantly to the analysis. In five of the eight models Wald tests indicate that the introduction of *peace years squared* is statistically significant.⁵⁶ *Peace years squared* is therefore included alongside *peace years* in five models.

Exposure to abolitionist pressure through membership in the Council of Europe is measured by the dummy variable *Council of Europe*. This variable equals one for years in which a country has been a member of the Council of Europe from 1983 and onwards, and zero for all non-members and for members prior to 1983. Thus, the variable does not measure Council of Europe membership per se, because it is not membership in itself that is expected to influence the likelihood of abolition. Rather, it is exposure to abolitionist pressure through membership in this organisation that is believed to increase the likelihood of abolition the death penalty, and there are no indications that the Council of Europe was an arena for such pressure during the first three decades of its existence. It was only towards the end of the 1970s that the subject was dealt with in any comprehensive manner. Work started on a draft for an additional protocol to the European Convention on Human Rights in 1982. Protocol No. 6, abolishing the death penalty in peacetime, was opened for signature in 1983, and this year is consequently chosen as the cut off point for the variable measuring abolitionist pressure. Ratification of the Protocol was not made a precondition for membership until 1994, a year that thus may be seen as another natural reference point for this variable.

⁵⁵ Countries that support the primary parties to a conflict with troops are not registered as being involved in an armed conflict. For instance, Norway sent troops to Iraq in 2004, but is not coded as being involved in an armed conflict in that year.

⁵⁶ P-values Wald tests: Abolition for all crimes: M1: p=.033, M2: p=.015, M3: p=.956, M4: p=.016. Abolition for ordinary crimes: M1: p=.055, M2: p=.056, M3: p=.970, M4: p=.316. Thus, in three of these models, the Wald test is significant at a five percent level or lower. In two of them, the tests fall just short of being significant at a five percent level. *Peace years squared* is nevertheless included in these models, for three reasons: Firstly, although it is established as conventional, the five percent level is in reality an arbitrary choice. Secondly, multicollinearity between *peace years* and its squared counterpart may make high levels of significance difficult to attain, and it may thus be seen as appropriate to set the limit to ten percent. Thirdly, the inclusion of *peace years* on its own in these two models creates problems with non-proportionality.

Nevertheless, *Council of Europe* measures membership from 1983, as it is clear that the issue was high on the agenda then, even if there was no formal requirement for members to abolish the death penalty. The operationalisation of this variable differs from previous research. Neumayer (2008b) also studies the effect of membership in the Council of Europe, but his measure identifies membership irrespective of time. Information about membership and entry dates is taken from the web pages of the Council of Europe (2008).

Abolitionist pressure from regional peers is measured through the variable *regional abolition*, which measures the share of countries in the region that have abolished the death penalty, adjusted for the share of abolitionist countries worldwide. This adjustment is made to avoid a spurious effect because of an abolitionist trend over time.⁵⁷ The variable thus measures the degree to which a region is abolitionist, relative to the world total at that time (Neumayer 2008b). The categorisation into regions is based on Hood's (2002) region-wise analysis of the status of the death penalty world wide, and divides countries into the following regions: Western Europe; Eastern Europe and the former Soviet Union; the Middle East and North Africa; Africa south of the Sahara; Asia and the Pacific; South and Central America; the Caribbean; and North America. Hood's (2002) geographical-cultural classification of regions is preferred over other purely geographical classifications (for instance the UN's), because it is assumed to group together countries that are more comparable in terms of policies such as the death penalty than countries grouped only on geographical grounds. This comparability of countries is essential to the existence of regional policy diffusion and abolitionist pressure.

5.2.2. Cultural factors

The variable *Islam* measures the percentage of Muslims in the population. Data are taken from the CIA's *World Factbook* (Central Intelligence Agency 2007). As no time-series data to my knowledge are available for this variable, 2007 data are used for the entire observation period. For some countries the percentage of Muslims will certainly have changed somewhat between 1960 and 2007, but overall it seems plausible that the numbers will be stable enough to include the measure in this manner.

⁵⁷ A high and strongly significant positive correlation between the unadjusted versions of *regional abolition* and the *year*-variable indicates that there indeed exists a positive trend towards abolition, and that using a measure of *regional abolition* without adjusting for this worldwide trend would lead to spurious findings. (The correlation between the unadjusted regional abolition variable and *year* is 0.42 when abolition is defined as for all crimes, and .27 for ordinary crimes, both highly significant.)

A dummy variable identifies countries whose legal system is based on English *common law*. Information is taken from La Porta, Lopez-De-Silanes, Shleifer and Vishny (1999).

5.2.3. Socio-economic factors

Level of economic development is measured by logged GDP per capita. GDP data are taken from the World Bank (2007), and are measured in constant 2000 US dollars. Because of the great dispersion of GDP levels across countries, the natural log of GDP per capita is used.

A more general measure of *human development* is provided by the human development index, calculated and made available by the United Nations Development Programme (2007). The human development index (HDI) is a summary composite index that measures a country's average achievements in three basic aspects of human development: health, knowledge, and standard of living. Health is measured by life expectancy at birth; knowledge by a combination of the adult literacy rate and the combined education enrolment ratio; and standard of living by GDP per capita (United Nations Development Programme 2008). The HDI ranges from 0 to 1, with higher values denoting higher levels of development. My measure of *human development* has been recoded to range from 0 to 100 to ease interpretation,⁵⁸ and has been interpolated to reduce problems with missing data.⁵⁹ It is not available before 1975, and is therefore only included in analyses of samples that are restricted to the years from 1975 and onwards.

Integration in the world economy is measured by the size of a country's international trade, provided by the World Bank (2007). The World Bank defines trade as the sum of exports and imports of goods and services measured as a share of gross domestic product (World Bank 2007), and higher values denote greater integration in the world economy. The natural logarithm of the measure is used, because of a very wide dispersion across countries and time.

⁵⁸ The HDI measure, as well as the fractionalisation measures that will be discussed below, has been recoded from a 0-1 scale to a 0-100 scale. If the variables are kept on a 0-1 scale, the hazard ratios for a one unit change may be somewhat misleading, as the observed values for these variables never reach the minimum and maximum of their "theoretical" scales, and a one unit change is therefore never actually observed. This, however, is a matter of preferences.

⁵⁹ Interpolation has been used because the level of human development can be expected to change gradually over time in most countries.

The Gini coefficient is used as the measure for *economic inequality*. The Gini coefficient is a measure of how the total income of a society is distributed among its members, and varies between 0 and 100, with higher values denoting a higher degree of inequality.⁶⁰

The coverage of the Gini coefficient is generally relatively poor. For instance, when the Gini coefficient made available by the World Bank (World Bank 2007) is included in my analyses, problems with missing data become so great that STATA is unable to estimate the effects of several variables. The World Institute for Development Economics Research at the United Nations University (UNU-WIDER) have collected data that are intended to facilitate research and debate on income inequality. These data have been made available through the World Income Inequality Database (WIID) (UNU-WIDER 2008). The WIID dataset contains data collected from 228 different sources, which in turn build upon different primary sources and surveys. The result of this is that the data in WIID differ in terms of segments of the population covered, unit of analysis, employed weights, and income definition. Furthermore, it includes multiple observations for many country-years. Thus, it is not possible to use these data in an analysis such as this without going through the very time-consuming process of reducing the dataset to single observations. Gunhild Gram Giskemo (2008), whose master's thesis explores the relationship between economic inequality, political instability and economic growth, has done this, and has been kind enough to share her Gini variable with me. Giskemo has reduced the dataset to single observations based on a set of prioritising rules regarding definition of income, unit of analysis, weighting system, and data sources.

Giskemo's (2008) Gini coefficient covers 867 country-years of my sample, more than tripling the 276 country-years covered by the World Bank's Gini measure. Furthermore, while the World Bank Gini variable has no data prior to 1979, Giskemo's covers the entire period from 1960 to 2004. The variable has been interpolated to further increase its coverage, which then reaches 2162 country-years. Correlation between Giskemo's Gini coefficient and the World Bank measure is strong. The correlation coefficient between her original variable and the World Bank measure is .91, and this is only marginally lower, at .90, when the interpolated measure is introduced.

⁶⁰ Alternatively, the Gini coefficient may vary between 0 and 1.

Measures of *ethnolinguistic* and *religious fractionalisation* are taken from Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg (2003). They provide three measures of fractionalisation, based on ethnicity, language and religion. All three represent the probability that two randomly selected individuals from a population belong to different groups. As both ethnic and linguistic characteristics are part of the criteria used by ethnologists and anthropologists to define the concept of ethnicity, it has been customary to group these two together into a measure of ethnolinguistic fractionalisation (often referred to as ELF). Alesina et al. (2003) are also not able to distinguish between the two criteria, and their measure of ethnic fractionalisation is in fact in many cases partly based on linguistic characteristics. However, they also compute a separate variable for linguistic fractionalisation that disregards racial or physical characteristics (Alesina et al. 2003).

The measures of *ethnic* and *linguistic fractionalisation* correlate too strongly with each other to be included in the same analyses, with a correlation coefficient of .70. The two measures are therefore averaged to create an index, thus ending up with a combined measure of *ethnolinguistic fractionalisation*.⁶¹ The variables from Alesina et al. (2003) are preferred over a traditional, ready-made measure of ethnolinguistic fractionalisation for two reasons: First and foremost, the measures from Alesina and his colleagues cover a lot of countries. The ELF measure provided by La Porta et al. (1999) is missing for 32 countries in my sample that are covered by Alesina et al. (2003).⁶² Secondly, the separate measures of ethnic and linguistic fractionalisation allow for testing whether the effect on abolition of the death penalty differs across measures.

All three original fractionalisation measures are observed at one point in time. *Ethnic fractionalisation* is based on information collected in different years in different countries, from 1979 to 2001. *Linguistic* and *religious fractionalisation* are both based on 2001-data. Alesina et al. (2003) assume that ethnic group shares are relatively stable, and that the resulting changes in the fractionalisation index over time are small. The same logic can be applied to the two other measures, and so I assume that the inclusion of measures that are constant over time will not distort the results substantially. Similarly, Neumayer (2008b)

⁶¹ The Cronbach alpha of the two measures is .82, indicating a high degree of covariance. It is customary to set .7 as the minimum level of Cronbach alpha when generating an index (Nunnally and Bernstein 1994: 265). It can therefore be assumed that the creation of an index based on the two measures is valid.

⁶² No countries that are covered by La Porta et al. (1999) are missing in Alesina et al. (2003).

assumes that ethnolinguistic characteristics are stable over time. The variables are rescaled to range from 0 to 100 to ease interpretation. Higher values denote greater fractionalisation, and thus greater diversity.

6. Analysing the determinants of abolition

The objective of this thesis is to determine how political, cultural and socio-economic factors affect abolition of the death penalty. Data have been collected for the largest possible sample of countries that had not yet abolished the death penalty by the end of 1959. Event history analysis, more specifically a series of Cox proportional hazards models, is applied to these data in order to determine which factors influence the risk of abolishing the death penalty. This approach goes beyond an examination of abolitionist versus retentionist countries at one point in time. Event history analysis not only distinguishes between countries that have abolished the death penalty and countries that have not, it also examines how long it takes a country to abolish capital punishment. The assumption is that countries with a higher risk of abolition will do away with capital punishment earlier than countries with a lower risk.

The previous chapters have discussed a range of political, cultural and socio-economic factors that are believed to influence abolition of the death penalty. These hypotheses will now be tested, both in bivariate and multivariate analyses. All models will be run with two different operationalisations of *abolition of the death penalty*. The strictest definition classifies as abolitionist only those countries that have abolished the death penalty *for all crimes*. This definition is then relaxed somewhat, so that countries that have abolished the death penalty *for ordinary crimes*, but that retain it for so-called “exceptional crimes” (which mainly includes crimes under military law), are also classified as having abolished the death penalty. The analyses will therefore be able to explore whether some of the variables have effects that differ with different definitions of abolition.

I will start out with a brief overview of the results from bivariate Cox regressions. Multivariate models will then allow for statistical control and more robust results. The results of the different multivariate models will be presented, before some important issues of model specification will be dealt with. This then opens up for a more thorough discussion of the results, before rounding up the chapter with a summary of the results.

6.1. Bivariate analyses

Bivariate analyses can offer an initial impression of the relationships that exist within the data. Bivariate Cox regressions support most, but not all of the hypotheses that were set

forth in Chapter three. Table 11 and Table 12 in Appendix C present the results from the bivariate analyses. All of the estimated effects that reach statistical significance are in line with expectations in terms of direction. Among the political factors nearly all of the variables are found to have a statistically significant and positive effect on the risk of abolition of the death penalty. This is mostly true for both operationalisations of abolition. Higher levels of *democracy*, a *democratic transition*, an additional year that goes by without the country experiencing an armed conflict (*peace years*), exposure to abolitionist pressure through membership in the *Council of Europe* from 1983 and onwards, and a higher share of abolitionist countries in the region (*regional abolition*) all increase the risk that a country will abolish the death penalty. A *centrist executive* significantly increases the risk of abolition of the death penalty *for ordinary crimes* compared to a right-wing executive, but the effect is statistically insignificant for abolition *for all crimes*. The only political factor which fails to reach the minimum significance level of five percent in both operationalisations of abolition is *left-wing executive*.

Both of the cultural factors significantly lower the risk of abolition. For *common law*, however, this is only true for abolition of the death penalty *for all crimes*. So a higher percentage of Muslims in a country lowers its risk of abolishing the death penalty for both ordinary and for all crimes, while a legal system based on British *common law* decreases the risk of abolition for all crimes.

Moving on to the socio-economic variables, higher *levels of economic development* significantly increase the risk of abolition in both its forms. The same is true for higher levels of *human development*. More *integration in the world economy* significantly raises the risk of abolition of death penalty for all crimes, but its effect on abolition for ordinary crimes fails to reach statistical significance. Similarly, a higher degree of *economic inequality* significantly lowers the risk of abolition for all crimes, but its effect on abolition for ordinary crimes is not statistically significant. Countries that have higher levels of *ethnolinguistic fractionalisation* are found to have a significantly lower risk of abolishing the death penalty for all and for ordinary crimes. The other measure of heterogeneity in the population, *religious fractionalisation*, on the other hand, has no statistically significant effect on the risk of abolition.

However, as bivariate analyses offer no way of controlling for other variables, and since these data, like virtually all data in the social sciences, include many variables that exhibit collinearity, the results of bivariate analyses cannot be regarded as anything more than an initial hint about relationships that may exist in the data. Multivariate analyses, on the other hand, allow for statistical control, and in the next section multivariate Cox models are applied to the data.

6.2. Multivariate analyses

The major strength of multivariate models is their ability to include more than one theoretically interesting variable in the same model, and to estimate the effects of each variable while holding the others constant through statistical control. In order for this to be possible, however, the explanatory variables must not correlate too highly with each other. As mentioned above, most variables used in the social sciences include some degree of collinearity. This does not generate statistical problems as long as the correlation coefficients are not much higher than .5. When correlation between explanatory variables exceeds .6 or .7, however, it is difficult to accurately determine the contribution of each of the highly correlated variables (Skog 2004: 288). It is therefore important to check for collinearity among the explanatory variables before running any multivariate analyses.

Correlation analyses of the independent variables show that there is only one variable pair that is so highly correlated that it may create any problems.⁶³ The correlation between *human development* and *level of economic development* is very high, with a correlation coefficient close to .9. This is not surprising, since the measure of human development actually is partially based on a measure of economic development (GDP). Because *human development* and *level of economic development* both theoretically and statistically can be seen as two alternative measures of development, the two will not be included in the same analysis.

The analyses are run with the two differing operationalisations of abolition of the death penalty, each being presented separately in the two following sections. For both operationalisations, the analyses are run with four different models that differ in terms of the independent variables included and thus in the countries and years covered. The composition of the models is a result of the aspiration to include as many relevant variables as possible

⁶³ Table 13 in Appendix C shows the results of pairwise correlations.

and at the same time building on as large a sample as possible. The analysis therefore starts out with the largest sample possible, and as more variables are added, more observations are lost because of missing data.

6.2.1. Abolition of the death penalty for all crimes

Table 4 presents the results of multivariate analyses of abolition of the death penalty for all crimes. Model one includes most of the political variables (excluding the measures of the political orientation of the executive) and both cultural variables. Among the socio-economic variables, however, only the two fractionalisation measures are included, in the interest of maximising sample size. In the subsequent three models, more variables are added, and as a consequence, more units are lost from the sample.

Recall that the hazard ratios are interpreted relative to 1.0, so that a hazard ratio of 1.05 indicates that a one unit increase in the corresponding variable is accompanied by a five percent increase in the hazard rate (reflecting the risk of abolition), and a hazard ratio of .95 relates that a one unit increase in the variable lowers the hazard rate by five percent. Effects are treated as significant if there is less than five percent chance that the null hypothesis of no relationship is true.⁶⁴ Wald tests show that each model as a whole contributes significantly to the explanation of the hazard of abolishing the death penalty, compared to an empty model. Furthermore, tests of the proportional hazards assumption based on Schoenfeld residuals are insignificant in all models, indicating that this important assumption holds.

Model one is based on the largest sample, and covers 145 countries and 49 abolitions, with a total of 4931 country-years. Nearly all of the political variables significantly influence the risk of abolition of the death penalty. Both *level of democracy* and a *democratic transition* raise the risk of abolition. A one unit increase in a country's *level of democracy* (measured through its Polity score) increases the hazard rate by ten percent. A country that has gone through a minor or major democratic transition during a given year experiences a more than seven times higher hazard of abolishing the death penalty for all crimes in that year than it does in a year with no democratic transition.

⁶⁴ Setting a threshold for significance will always be arbitrary (Henkel 1976). One must also recognise that a change in significance levels that move an estimate in or out of the accepted levels may in itself not be statistically significant (Gelman and Stern 2006).

Table 4: Abolition of the death penalty for all crimes

Independent variables	Model 1	Model 2	Model 3	Model 4
Democracy	1.100** (.031)	1.088** (.034)	1.100 (.067)	1.155*** (.047)
Democratic transition	7.278*** (3.177)	5.802*** (2.929)	9.479*** (5.71)	9.320*** (5.475)
Left-wing executive				5.604*** (2.699)
Centrist executive				1.052 (.912)
Peace years	.937 (.031)	.921* (.033)	1.033* (.014)	.881* (.054)
Peace years squared	1.002* (.001)	1.002* (.001)		1.003* (.001)
Council of Europe	5.165*** (2.161)	3.369** (1.488)	4.333* (2.508)	7.975* (7.363)
Regional abolition	1.254* (.141)	1.336* (.159)	1.529** (.239)	1.714* (.405)
Islam	.994 (.007)	.998 (.007)	.994 (.012)	.971* (.012)
Common law	.028 (.051)	.030 (.054)	.537 (.233)	.002** (.005)
Common law*analysis time	1.115 (.065)	1.105 (.065)		1.208** (.082)
Level of economic development		1.037 (.117)	1.021 (.189)	
Human development				.978 (.022)
Integration in world economy		2.512** (.676)	2.001* (.672)	2.177* (.810)
Economic inequality			.987 (.025)	
Ethnoling. fractionalisation	1.004 (.007)	.999 (.008)	.996 (.010)	1.008 (.013)
Religious fractionalisation	1.005 (.008)	1.009 (.008)	1.030** (.009)	1.017 (.015)
Period covered	1960-2004	1960-2004	1960-2004	1975-2004
Number of country-years	4931	4017	2031	1428
Number of countries	145	136	106	85
Number of abolitions	49	46	30	27
Log-likelihood	-174.92	-157.24	-77.11	-63.91
Wald chi2	125.60	118.12	113.85	72.77
Prob > chi2	0.000	0.000	0.000	0.000
Global Schoenfeld test of PH, chi2	8.87	8.86	8.36	3.23
Prob > chi2, global Schoenfeld test	.634	.784	.757	.999
Chi2, l-r test <i>peace years (squared)</i>	5.75	7.88		8.03
Prob > chi2, l-r test <i>peace years (sq.)</i>	.057	.020		.018
Chi2, l-r test <i>common law (*t)</i>	11.57	11.83		7.72
Prob > chi2, l-r test <i>common law (*t)</i>	.003	.003		.021

Hazard ratios, with robust standard errors in parentheses. Efron method is used to handle ties.
Significance: *** p<.001 ** p<.01 * p<.05. All tests are two-tailed.

Recall that a squared version of *peace years* has been included in the models where it has been found to contribute significantly. Also recall that *peace years* and *peace years squared* cannot be evaluated individually, neither in terms of their effects nor their statistical significance. A likelihood ratio test indicates that the two variables come very close to being jointly significant at the five percent level, with a p-value of .057.⁶⁵ At first glance, the effect of a country's experience with armed conflicts seems to run contrary to expectations, as *peace years* has a negative effect on the risk of abolition. However, this effect cannot be seen as independent from the positive effect of *peace years squared*. This means that the initial negative effect of *peace years* is offset by the positive effect of *peace years squared*. More precisely, an additional year that goes by without a country experiencing armed conflict has a diminishing negative effect up until 21 peace years. At this point the function changes direction and an additional peace year has an increasingly positive effect on the risk of abolition.⁶⁶ The *Council of Europe* dummy variable exhibits a positive and significant effect on the risk of abolition. A country that is exposed to abolitionist pressure through membership in the Council of Europe from 1983 has a hazard of abolition that is more than five times higher than an otherwise similar country that is not exposed to such pressure. *Regional abolition* also has a positive and significant effect on the risk of abolition, with a one unit increase in this variable leading to a 25 percent increase in the hazard rate.

As discussed in Chapter four, tests identified problems with non-proportionality related to the *common law* variable. In other words, it appeared that the effect of *common law* may not be constant over time. Therefore *common law* is only included in the analyses alongside a second variable that interacts *common law* with a measure of analysis time (years since the country entered the analysis). A likelihood ratio test confirms that the two variables are jointly significant, and the results show that the effect of a legal system based on English common law does indeed change over time. The effect of *common law* is initially strongly negative, but this effect weakens over time, and in fact it turns positive around 32 years after

⁶⁵ All likelihood ratio tests are presented in Table 4 and Table 5. Note: all likelihood ratio tests are based on non-robust analyses, as STATA is not able to run this test on models with robust standard errors.

⁶⁶ A quadratic function $ax^2 + bx$ reaches its maximum or minimum at $x = -b/2a$, at which point the function changes direction (Cleves et al. 2004: 161). a and b are the coefficients of *peace years squared* and *peace years*, respectively, ie the natural logarithm of the hazard ratios reported in Table 4. Note: because of rounding the results will differ substantially from those reported when one simply uses the logarithm of the hazard ratios reported in Table 4. The effect of one additional peace year at various points in the function is presented in Table 14 in Appendix D.

a country entered the analysis.⁶⁷ The second cultural factor that is included in the analysis, *Islam*, fails to reach an accepted level of significance, as do the two social threat variables, *ethnolinguistic* and *religious fractionalisation*.

Model two introduces two more socio-economic variables in the analysis: *level of economic development* and *integration in the world economy*. This reduces the number of countries and abolitions covered to 136 and 46, respectively. *Level of economic development* (measured by logged GDP per capita) does not significantly affect the risk of abolition of the death penalty. *Integration in the world economy* (measured by logged trade), on the other hand, has a significant and positive effect on the risk of abolition. A one unit increase in logged trade increases the hazard rate by approximately 150 percent. Since the trade variable is logged, a one unit increase holds little intuitive meaning. Applying a little math, however, reveals that a one *percent* increase in the trade score raises the hazard of abolition by .9 percent.⁶⁸ The introduction of the two new variables only lead to minor changes in the size of the effects other variables, compared to model one. A likelihood ratio test of the joint contribution of *peace years* and *peace years squared* is now significant at the five percent level, and the effect of an additional peace year is approximately the same as in the previous model.

Model three introduces a measure of *economic inequality* (measured through the Gini coefficient). Even though the measure of Gini used in these analyses has much wider coverage than more commonly used versions, its introduction leads to the loss of 30 countries and 16 abolitions, compared to the previous model. *Economic inequality* does not have a significant effect on abolition, and will not be carried over to the next model. The effects of most variables remain very similar to the previous models, with three exceptions. Firstly, the effect of *level of democracy* is no longer statistically significant. Secondly, the introduction of *peace years squared* has not been found to significantly improve this model, and *peace years* is therefore included alone. The effect of *peace years* is statistically significant, with one additional peace year increasing the hazard of abolition by approximately three percent. Thus, its effect is linear and positive, as opposed to previous

⁶⁷ The effect of a legal system based on common law at various points in analysis time is presented in Table 15 in Appendix D.

⁶⁸ The effect of a one percent increase in a logged variable is found by dividing the coefficient by 100. The hazard ratio is then found by exponentiating this number.

models where the effect is negative at lower values before it turns positive at higher values. Thirdly, the effect of *religious fractionalisation* reaches statistical significance, and contrary to expectations it actually has a positive effect on the risk of abolition. A one unit increase in *religious fractionalisation* brings with it a three percent increase in the hazard of abolition of the death penalty.

In model four, three new variables are introduced into the analysis. Two dummy variables measuring the political orientation of the executive are included: *left-wing* and *centrist executive*. Furthermore, a new measure of development is introduced, as *economic development* (measured by logged GDP per capita) is replaced by *human development* (HDI). Unfortunately, these measures are only available from 1975, reducing the sample to 85 countries and 27 abolitions.⁶⁹ *Left-wing executive* has a positive effect on the risk of abolition, as expected. A country whose executive is defined as left-wing has a hazard of abolishing the death penalty for all crimes that is 5.6 times higher than the hazard rate of an otherwise similar country whose executive is defined as right-wing. The risk of abolition for *centrist executives* is not distinguishable from that of right-wing executives. The effect of *human development* is statistically insignificant, and thus shows no signs of being a better suited measure of development than *logged GDP per capita*. The only major change in the remaining variables, compared to previous models, is that *Islam* for the first time significantly affects the risk of abolition. An increase of one percentage point Muslims in the population is estimated to lower the hazard rate by approximately three percent.

6.2.2. Abolition of the death penalty for ordinary crimes

As mentioned before, abolition of the death penalty can be defined in more than one way, and one of the aims of this thesis is to explore whether estimated effects vary with different definitions of abolition. The same analyses as those reported above have therefore been run with a slightly different operationalisation of abolition. The “strict” definition of abolition has been relaxed somewhat, so that a country no longer has to have abolished the death penalty *for all crimes* to be considered as abolitionist. A country is now considered as having abolished the death penalty as long as it has abolished *for ordinary crimes*, even if the death penalty remains on the statute books for so-called “extra-ordinary” crimes. Countries that

⁶⁹ Countries that abolish the death penalty before 1975 have been omitted from the sample, following the same logic concerning left-censoring that informed the creation of the main datasets. Thus, model four is based on a sample of countries in the world *that had not abolished the death penalty by the end of 1974*.

have abolished for all crimes are still considered as abolitionist. This means that more countries experience the event, as the threshold for being considered abolitionist is lower. However, it also means that more countries experienced the event before the start of the observation period (or before independence), and therefore that more countries are omitted from the sample due to left-censoring.

Table 5 shows the results of the analyses with time to abolition of the death penalty *for ordinary crimes* as the dependent variable. Many of the variables exhibit effects that are very similar to those in the analyses of abolition for all crimes. Four main differences stand out, however. Firstly, whereas the effect of a *centrist executive* was statistically insignificant in the analysis of abolition *for all crimes*, a centrist executive is now estimated to raise the risk of abolition substantially. The hazard of abolition for a country under a centrist executive is estimated to be 4.9 times higher than the hazard for a country run by a right-wing executive. By comparison, the effect of a *left-wing executive* is to increase the hazard of abolition by a factor of 3.4, compared to a country under a right-wing executive. Thus, a centrist executive raises the risk of abolition *for ordinary crimes* just as much as a *left-wing executive* does.⁷⁰ Secondly, a country's experience with armed conflict does not significantly affect the risk of abolition of the death penalty for ordinary crimes. Thirdly, the effect of a legal system based on English common law is also insignificant. Finally, *integration in the world economy* does not influence the risk of abolition for ordinary crimes in any of the models.

⁷⁰ Although the estimated hazard ratio of *centrist executive* is larger than the estimate for *left-wing executive*, the difference between these two hazard ratios is not statistically significant. Therefore it cannot be inferred that a centrist executive raises the hazard rate more than a left-wing executive does. A Wald test of the equality of the coefficients gives $\text{Chi}^2 = .23$ and $p = .632$, failing to reject the null hypothesis that the effects are equal.

Table 5: Abolition of the death penalty for ordinary crimes

Independent variables	Model 1	Model 2	Model 3	Model 4
Democracy	1.083* (.036)	1.082* (.039)	1.133* (.055)	1.087* (.046)
Democratic transition	7.582*** (2.916)	6.060*** (2.430)	10.517*** (4.379)	7.628** (5.776)
Left-wing executive				3.362** (1.462)
Centrist executive				4.936* (3.794)
Peace years	.938 (.030)	.936 (.034)	1.028 (.016)	.994 (.015)
Peace years squared	1.001 (.001)	1.001 (.001)		
Council of Europe	7.508*** (3.242)	5.541*** (2.683)	10.131*** (6.192)	15.559** (12.772)
Regional abolition	1.645** (.283)	1.923** (.376)	2.164** (.566)	2.503** (.782)
Islam	.989 (.007)	.995 (.007)	.982* (.009)	.981* (.008)
Common law	.539 (.233)	.315 (.266)	.607 (.401)	.340 (.200)
Common law*analysis time		1.017 (.033)		
Level of economic development		.897 (.124)	.774 (.145)	
Human development				1.003 (.020)
Integration in world economy		1.609 (.512)	.972 (.375)	.666 (.275)
Economic inequality			1.027 (.022)	
Ethnoling. fractionalisation	1.004 (.007)	1.002 (.008)	1.009 (.010)	1.012 (.012)
Religious fractionalisation	1.014 (.010)	1.019 (.016)	1.026 (.015)	1.025 (.014)
Period covered	1960-2004	1960-2004	1960-2004	1975-2004
Number of country-years	4391	3494	1656	1105
Number of countries	134	124	94	74
Number of abolitions	49	46	31	28
Log-likelihood	-164.57	-147.77	-68.92	-59.14
Wald chi2	197.05	153.65	153.08	99.47
Prob > chi2	0.000	0.000	0.000	0.000
Chi2, global Schoenfeld test of PH	12.03	16.76	13.08	5.59
Prob > chi2, global Schoenfeld test	.283	.211	.363	.960
Chi2, l-r test <i>peace years (squared)</i>	3.78	3.99		
Prob > chi2, l-r test <i>peace years (sq.)</i>	.151	.136		
Chi2, l-r test <i>common law (*t)</i>		3.48		
Prob > chi2, l-r test <i>common law (*t)</i>		.176		

Hazard ratios, with robust standard errors in parentheses. Efron method is used to handle ties.
Significance: *** p<.001 ** p<.01 * p<.05. All tests are two-tailed.

The remaining effects are similar to those in Table 4. Higher levels of *democracy* significantly raise the risk of abolition in all models. A one unit increase in Polity score is estimated to increase the hazard rate by between eight and 13 percent. Likewise, a *democratic transition* is associated with a dramatically higher risk of abolition in all models, increasing the hazard rate by a factor of 6.1 to 10.5. Membership in the *Council of Europe* from 1983 and onwards also has a very strong effect, increasing the hazard rate by a factor of 5.5 to 15.6. *Regional abolition* is found to significantly influence the risk of abolition in all models, with a one point increase raising the hazard by 65 to 150 percent. The percentage of Muslims in the population (*Islam*) significantly influences the risk of abolition in the two smaller samples, with one percentage point more Muslims lowering the hazard rate by almost two percent. None of the socio-economic variables are significantly related to the risk of abolition of the death penalty for ordinary crimes.

6.3. Model specification

If the results of a statistical analysis are to be credible, one must make sure that the model is correctly specified. The important proportional hazards assumption has already been dealt with, and all models have been shown to meet this assumption. Furthermore, a number of sensitivity tests have been run to check the robustness of the analyses.

6.3.1. Sensitivity tests

All over, the results are very robust in the face of alternative samples and operationalisations. The most important sensitivity test concerns the sample of the analyses. As mentioned in Chapter five, the analyses in this thesis encounter the problem of left-censoring, that is, units that experience the event in question before the start of the observation period. Some of the countries that have abolished the death penalty today did so before 1960 or before the country gained independence. As explained before, these countries have been omitted from the sample. Some researchers, however, claim that it may be preferable to include left-censored cases and code them as having experienced the event in the first year of the analysis period (Mooney and Lee 2000). In order to test whether results differ between these two solutions, the analyses have been run on an extended sample that includes countries that abolished before 1960 or before independence, setting abolition to the first year of observation for these countries. Results are reported in Table 16 and Table 17 in Appendix E.

Overall, the results from analyses run on the extended samples are very similar to the results reported above. The sizes of the effects vary somewhat, and some effects lose or gain statistical significance in one or two models, compared to the corresponding model in Table 4 or Table 5. However, these changes are not pervasive enough to change the overall conclusions about which variables significantly affect abolition, and the direction and approximate size of these effects. Thus it does not appear that the main conclusions of the analyses are dramatically affected by the choice of excluding from the sample countries that abolished the death penalty before 1960 or prior to independence.

A range of other tests have been run to see whether the independent variables could fruitfully have been operationalised in a different way. To allow for the possibility that variables may have threshold effects, each continuous variable has been transformed to a dichotomous indicator of values above or below the mean and the median of that variable. Furthermore, alternative operationalisations of *Islam* and *ethnolinguistic fractionalisation* have also been tested. These tests are presented in more detail in Appendix A. The tests fail to identify any operationalisations that appear more suitable than the ones that have been chosen, and the results are overall very robust to alternative operationalisations.

6.4. Discussion

Having reviewed the model specification, it has been established that the results reported in Table 4 and Table 5 are not invalidated by failure to live up to the assumptions of the applied model, and that the results are robust. In this section I will go into a more thorough discussion of the results. When assessing the size of the effects, the results of models one and two are preferred when available, since these are based on the largest number of countries and abolitions.

Table 6 shows percentage change in the hazard of abolition for a one standard deviation change in the continuous variables, and for a change from zero to one in the dummy variables. Its results are discussed in the following sections.

6.4.1. Political factors

The political factors have been shown to be the most important in influencing the risk of abolition of the death penalty. All of the political variables that have been included in the

analysis significantly affect the risk of abolition, and almost all of them do so consistently across samples, model specifications and for both definitions of abolition.

Table 6: Percentage change in hazard of abolition

Abolition of the death penalty for all crimes					
	Model 1	Model 2	Model 3	Model 4	(Std.dev.)
Democracy	100.1	84.7	n.s.	184.9	(7.3)
Democratic transition (D)	627.8	480.2	847.9	832.0	
Left-wing executive (D)				460.4	
Centrist executive (D)				n.s.	
Peace years	n.s.	---	56.3	---	(13.6)
Peace years squared	n.s.	---		---	
Council of Europe (D)	416.5	236.9	333.3	697.5	
Regional abolition	29.1	38.6	61.4	83.5	(1.1)
Islam	n.s.	n.s.	n.s.	-68.5	(38.8)
Common law (D)	---	---	n.s.	---	
Common law*analysis time	---	---		---	
Level of economic development		n.s.	n.s.		(1.5)
Human development				n.s.	(18.1)
Integration in world economy		78.2	54.5	62.9	(.6)
Economic inequality			n.s.		(10.1)
Ethnoling. fractionalisation	n.s.	n.s.	n.s.	n.s.	(25.9)
Religious fractionalisation	n.s.	n.s.	107.8	n.s.	(24.4)
Abolition of the death penalty for ordinary crimes					
	Model 1	Model 2	Model 3	Model 4	(Std.dev.)
Democracy	71.3	71.1	133.0	76.4	(6.8)
Democratic transition (D)	658.2	506.0	951.7	662.8	
Left-wing executive (D)				236.2	
Centrist executive (D)				393.6	
Peace years	n.s.	n.s.	n.s.	n.s.	(13.0)
Peace years squared	n.s.	n.s.			
Council of Europe (D)	650.8	454.1	913.1	1455.9	
Regional abolition	50.3	70.8	88.1	112.0	(.8)
Islam	n.s.	n.s.	-52.1	-52.4	(39.6)
Common law (D)	n.s.	n.s.	n.s.	n.s.	
Common law*analysis time		n.s.			
Level of economic development		n.s.	n.s.		(1.4)
Human development				n.s.	(17.2)
Integration in world economy		n.s.	n.s.	n.s.	(.6)
Economic inequality			n.s.		(10.0)
Ethnoling. fractionalisation	n.s.	n.s.	n.s.	n.s.	(26.0)
Religious fractionalisation	n.s.	n.s.	n.s.	n.s.	(24.8)

Percentage change in hazard rate due to a one standard deviation change in continuous variables and a change from zero to one for dummy variables. Dummy variables are marked with a (D). Standard deviations are calculated from the model 1-samples in each table. Only estimates significant at the five percent level or lower are reported. Change in hazard for *peace years* and *peace years squared* is not reported for models where these appear together, neither is the change in hazard for *common law* and *common law*analysis time* (marked by ---). See text for details.

As mentioned in Chapter three, a country's *level of democracy* is the one factor that most consistently has been found to be related to abolition of the death penalty in previous quantitative research. In fact, all statistical studies of abolition of the death penalty that I have come across have found higher levels of democracy to lead to either a higher risk of

abolition or to a higher probability that the death penalty has been abolished. This analysis continues that trend, with higher levels of democracy significantly raising the risk of abolition for all crimes as well as for ordinary crimes. As Table 6 demonstrates, an increase in a country's Polity score of one standard deviation (approximately seven points) increases the hazard of abolition by 70 to 100 percent in the larger samples. The relationship between democracy and risk of abolition holds up after controlling for other possible causes, and thus this analysis provides further support to the claim that certain principles of democracy are indeed inconsistent with the use of capital punishment.

A *democratic transition* in a country in a given year increases the likelihood that this country will abolish the death penalty in that year dramatically, and this is true for both operationalisations of abolition. The results thus provide support for the assertion that abolition may be seen as a way of distancing the new regime from the old following a democratic transition, given the emphasis on human rights in most such transitions. Holding all else equal, a democratic transition increases the hazard rate by a factor of 5.8 to 7.6 in the four largest samples. The effect of a democratic transition is even stronger in the smaller samples. This makes *democratic transition* one of the variables with the strongest effect on the risk of abolition, alongside *Council of Europe*. There are no previous quantitative studies which have included a comparable measure of democratic transitions, and that therefore can serve as a point of comparison in terms of the size of the effect. Although the estimated effect of a democratic transition on the risk of abolition is very strong, it may not be unrealistic given the extraordinary circumstance that such a transition constitutes. In fact, a democratic transition is a relatively rare event, and in the 4931 country-years that are included in the analysis of abolition of the death penalty for all crimes, only 142 democratic transitions occur.

The political orientation of the executive is found to significantly affect the risk of abolition of the death penalty, but the effect differs with different definitions of abolition. When analysing abolition of the death penalty *for all crimes*, the hazard rate is estimated to be more than five times higher for a country with a *left-wing executive* than the hazard rate of an otherwise similar country that is governed by a right-wing executive. The risk of abolition for all crimes for a country under a *centrist executive*, on the other hand, is not statistically distinguishable from that of a country under a right-wing executive. When the definition of

abolition is expanded, however, this changes. Both *left-wing* and *centrist executives* are estimated to increase the risk of abolition *for ordinary crimes* relative to right-wing executives, with hazard ratios of 3.4 and 4.9, respectively.

Whereas the theoretical background led to the expectation that left-wing governments and voters will be more inclined towards abolition than those on the political right, and thus that a left-wing executive will raise the hazard of abolition compared to a right-wing executive, it did not provide grounds for corresponding expectations regarding centrist executives. The results indicate that centrist governments and voters may in fact behave similarly to those on the retentionist political right when it comes to abolition *for all crimes*, whereas they behave more like the abolitionist political left when abolition is defined as *for ordinary crimes*. In this way they seem to be situated in the middle not only on the political scale, but also in terms of attitudes towards the death penalty, favouring abolition for ordinary crimes to a larger extent than the political right, but not being willing to do away with capital punishment for all crimes to the degree that the political left is. This is a new finding, since no previous studies (to my knowledge) have included a measure that distinguishes centrist from right-wing executives. It must be noted, however, that these results are based on relatively small samples, only covering the period from 1975 to 2004, and thus only countries that had not abolished the death penalty by the end of 1974. Furthermore, the two models in which a *centrist executive* is found to influence abolition for ordinary crimes, but not abolition for all crimes, differ not only in terms of the definition of abolition, but consequently also in the samples they are based on. When the definition of abolition is expanded to include abolition for ordinary crimes, it also means that more countries are omitted because of left-censoring. When the sample size is as small as it is in these two models, this may have a substantial impact on the results. Thus, it will take further research to determine whether these results reflect real differences between different groups on the political spectrum, or if they are merely an artefact of sample differences.

The number of years that have gone by since a country last experienced an armed conflict is found to significantly affect the risk of abolition *for all crimes*. These findings stand in contrast with previous research, where the effect of *peace years* has failed to reach statistical significance (Neumayer 2008b). Neumayer (2008b), however, only includes a first degree measure of peace years. When *peace years* is included without a squared counterpart in all

models of Table 4 and Table 5, it only reaches statistical significance in model three of Table 4, which is based on a relatively small sample. A second degree variable is included alongside the first degree variable in the models where Wald tests indicate that such an expansion is statistically significant.

Table 6 does not include estimated effects for *peace years* and *peace years squared* in the models in which these are found to be jointly significant, as these variables cannot be interpreted independently of each other. The effect of an additional *peace year* on the risk of abolition *for all crimes* is non-linear and takes a u-shaped form in three of the models. Up until around 21 peace years, an additional year going by without the country experiencing an armed conflict has a negative but diminishing effect on the risk of abolition of the death penalty for all crimes. From there on the effect turns positive and increases in size as peace years accumulate. Table 14 in Appendix D illustrates the form of this function by giving the percentage change in the hazard rate from a one year increase at different points in the function. Using the results from model two in Table 4, the risk of abolition for a country that has gone one year since an armed conflict is 7.7 percent smaller than it was in the previous year, when the country was involved in an armed conflict (*peace years*=0). This effect decreases gradually, and if an additional year is added to 20 peace years, the decline in the hazard of abolition is only .3 percent. Having passed the turning point in the function, an additional year added at 22 peace years increases the risk of abolition with .4 percent. The now positive effect increases gradually, and when an additional year is added to 58 peace years, reaching the maximum observed value of 59 peace years, the hazard of abolition is raised 15.3 percent. Although the effect of one additional peace years is positive from around 21 peace years, the negative effects have accumulated up until this point, so that a country that has been at peace for 21 peace years has a risk of abolition that is 58 percent lower than a country that has been involved in an armed conflict in the current year. It is not until around 43 peace years that this positive effect cancels out the accumulated negative effect. A country that has been at peace for 59 years (the maximum observed) has a more than six times higher hazard of abolishing the death penalty than a country currently involved in an armed conflict.

The effect of *peace years* on the risk of abolition for all crimes is significant and linear in the remaining model three, with an additional peace year raising the hazard rate by

approximately three percent. A one standard deviation increase in peace years (13.6 peace years) is estimated to raise the hazard of abolition by 56 percent.⁷¹ The fact that the effect is linear in this model is due to reduction in sample size rather than to the introduction of any new variables, and therefore the results from models one and two are taken to be more credible.⁷²

It is not assumed that the reported details about the non-linear effect of *peace years* give an accurate account of exactly how a country's experience with armed conflict influences its risk of abolishing the death penalty. For instance, these results are not taken to mean that there is something special about the twenty-first year of peace, even if this is when the estimated effect of an additional peace year turns from negative to positive. It must be assumed that this effect may have been modelled in a less than optimal way. The results do, however, indicate that experience with armed conflict appears to influence death penalty abolition, and that the form of this effect may be complicated. The fact that the positive effect of an additional peace year does not seem to kick in before after some time can at least partly be understood on the basis of the theoretical foundations laid out in Chapter three. It may take a long time before peace is institutionalised, and before important actors feel secure enough to give up the possibility of using capital punishment in a time of crisis. Thus, a "recent" experience with war need in fact not be so recent for the involvement in armed conflict to still influence the likelihood of abolition. The fact that the initial effect is estimated to be negative is more difficult to find theoretical grounds for, and further investigation is needed to determine the nature of this relationship.

The effect on peace years on the risk of abolition is insignificant when the definition of abolition is expanded to also include abolition for ordinary crimes. This may be taken as an indication that experience with armed conflict influences the risk of abolition of the death penalty *for all crimes*, but that it does not necessarily affect abolition *for ordinary crimes*.⁷³ Recall that two different arguments regarding the relationship between experience with war and abolition of the death penalty have been presented. Firstly it has been argued that the

⁷¹ Recall that a Wald test showed that the introduction of *peace years squared* does not constitute a statistically significant improvement of this model.

⁷² When the analysis from model two is run on the sample from model three, the effect of an additional peace year is linear. This shows that the fact that *peace years* has a linear effect in model three is due to the reduction in sample size rather than the introduction of new variables.

⁷³ It must be remembered that abolition *for ordinary crimes* in fact also incorporates abolition *for all crimes*.

values at stake in a time of war or in a war-like situation are so great that the death penalty may be seen as a necessary tool to protect the existence of society. A country that has recently been involved in a war or a war-like situation will probably experience the risk of returning to such a situation as greater than a country with a long history of peace, and therefore a recent experience with war is expected to lower the likelihood that a country will abolish the death penalty *for war-time crimes*. According to this line of argument, a recent experience with war will not influence the risk of abolition for ordinary crimes. The second argument that has been presented, however, claims that a country involved in a war will develop a political culture that endorses killing as necessary for the defence of society, and that this logic can be extended to those that may be considered as internal enemies, like criminals. Since a political culture is not likely to change overnight, a recent experience with war is expected to reduce the chances of abolition *for ordinary crimes*. The fact that experience with war is found to significantly influence the risk of abolition *for all crimes*, but not the risk of abolition *for ordinary crimes* may indicate that the first line of argument has more root in reality than the other. However, further research is needed to rule out the possibility that these results are an artefact of sample differences.

Moving on to the first of the two variables that pick up on the pressure applied by abolitionist countries to make retentionist countries join the abolitionist camp, membership in the *Council of Europe* from 1983 and onwards has a strongly significant effect on abolition of the death penalty in all models. More precisely, according to estimates from the two larger samples, countries that were exposed to abolitionist pressure through membership from 1983 and onwards experience a hazard of abolition *for all crimes* that is 3.4 to 5.2 times greater than the hazard experienced by countries not exposed to such pressure. The corresponding hazard ratios for abolition *for ordinary crimes* are 5.5 to 7.5. Although the standard errors are large, the estimates are consistently larger for the wider definition of abolition, and it may thus appear that the effect is somewhat stronger when abolition is defined as *for ordinary crimes*. Although this is a very tentative observation, it is plausible. The focal point of abolitionist pressure in the Council of Europe, Protocol No. 6, allows countries to retain the death penalty in time of war or in imminent threat of war, and it can therefore be expected that pressure will focus on abolition of the death penalty for ordinary crimes.

The pressure applied by the Council of Europe on potential members to abolish the death penalty may in reality be even stronger than what these results indicate. The operationalisation of the variable, where the dummy is set to one for the years in which a country is a member, would not pick up the instances where a country abolishes the death penalty as a part of their preparations for membership, if the abolition occurred *before* membership started. Georgia can probably be seen as an example of this trajectory. The country became a member of the Council of Europe in 1999, but abolished the death penalty for all crimes two years earlier, in 1997. As Hood and Hoyle state, the President, who initiated the abolition, along with NGOs, political parties, the Church and the newspapers, all “[...] recognized that Georgia’s place in Europe was dependent on it abolishing the death penalty” (Hood and Hoyle 2008: 56-57). Of course, Georgia’s “place in Europe” consisted of more than its membership in the Council of Europe, but there is little doubt that membership generally has been seen as one important step on that path.

Further indications of the importance of peer pressure and policy diffusion are found when examining the effect of *regional abolition*. The estimated effect is significant in all models. An increase in the *regional abolition* score of one standard deviation (1.1 points in analyses of abolition for all crimes, .8 points in analyses of abolition for ordinary crimes) is accompanied by a 25 to 90 percent rise in the hazard of abolishing the death penalty. It matters whether or not neighbouring countries have abolished the death penalty. A retentionist country surrounded by abolitionist neighbours will be put under great pressure to abolish, and it appears that this pressure may yield results, in terms of raising the risk of abolition.

6.4.2. Cultural factors

Although the results provide mixed evidence of the effect of Islam on the risk of abolition of the death penalty, the overall conclusion is that other factors than religion explain why most predominantly Muslim countries retain the death penalty. The effect of *Islam* is statistically significant at the five percent level in three of the smaller samples, with an increase of one standard deviation (approximately 39 percentage points) lowering the hazard of abolition by 50 to 70 percent. However, the effect is not statistically significant in any of the larger samples. Furthermore, it appears that predominantly Muslim countries are underrepresented in the smaller samples due to missing data. While the mean percentage of Muslims is 32 percent in the sample of model one in Table 4, this is reduced to less than 17 percent in

model four of the same table. These results are therefore not seen as sufficient to establish that there is a real causal relationship between *Islam* and the risk of abolition of the death penalty. Thus, although there on the surface appeared to be a relationship between Islam and abolition, as seen in the bivariate analysis where a higher percentage of Muslims significantly lowered the risk of abolition, this effect does not hold up when other factors are introduced into the analysis. It is other factors than religion that explain why most predominantly Muslim countries retain the death penalty, for instance lack of democracy, experience with war, and lack of abolitionist pressure from regional peers. In fact, the countries with a predominantly Muslim population that have abolished the death penalty are all situated outside the Middle East,⁷⁴ indicating that it may be factors specific to this region that explain the role that capital punishment plays in these countries.

Recall that tests revealed problems with the proportional hazards assumption in relation to the *common law* variable in four of the models. In other words, the effect of this variable appeared to vary over time. A variable interacting *common law* with a measure of analysis time has therefore been included alongside the original *common law* dummy variable in these models. These two variables are estimated to significantly influence the risk of abolition of the death penalty *for all crimes* in all three models where the interaction term was introduced. Table 15 shows the percentage difference in hazard rates between a common law country and a non common law country at different points in analysis time. The effect of a legal system based on English common law is initially strongly negative. For two countries observed in their first year of observation, a common law country is estimated to face a 97 percent lower hazard of abolition than an otherwise similar non common law country.⁷⁵ This effect diminishes gradually over time. It is still strong 22 years into the observation period, with *common law* lowering the hazard rate by 70 percent. After 33 years, however, the effect has turned positive, and a common law country faces a one percent *higher* hazard of abolition than a non common law country. 45 years into the analysis period (which is the maximum length of time any country is observed for), *common law* raises the hazard of abolition by as much as 270 percent.

Thus, it appears that the expected negative effect of an English legal heritage abates with

⁷⁴ See footnote 24.

⁷⁵ This discussion refers to the results from model one in Table 15.

time. Given that the analysis covers a period of 45 years, it is entirely plausible that a heritage that may influence a country early on in the period may not have the same effect many years later. The positive effect that *common law* is estimated to have on the risk of abolition towards the end of the observation period is contrary to expectations, and is hard to explain. Nevertheless, the results show that, as expected, a legal system based on English common law lowers the hazard of abolition throughout most of the observation period. In fact, one third of the countries included in the analyses are observed for less than 33 years, and thus are never exposed to the positive effect of *common law*.⁷⁶

The effect of *common law* on the risk of abolition of the death penalty *for ordinary crimes* fails to reach statistical significance in all models. This may be an indication that whereas common law countries have been less prone to abolish the death penalty *for all crimes*, they are not distinguishable from non-common law countries in terms of their propensity to abolish capital punishment *for ordinary crimes*.

6.4.3. Socio-economic factors

A country's *level of economic development* does not significantly influence the risk of abolition of the death penalty. Thus, in line with previous research, no evidence is found to suggest that modernisation and "civilisation" make richer countries less willing to impose the death penalty than poorer countries. Furthermore, it does not seem like the level of *human development* is a better measure of modernisation than economic development in this context, as *human development* also does not affect the risk of abolition significantly.

The degree to which countries are integrated in the international economy is found to positively affect the risk of abolition of the death penalty *for all crimes*. An increase of one standard deviation in the size of a country's logged trade (.6 points) is estimated to raise the hazard of abolition by close to 80 percent. This indicates that countries that are more dependent on economic relations with other countries through imports and exports are more likely to abolish the death penalty for all crimes than countries that are economically more isolated. This is a very interesting finding, as no previous research has included a measure of economic integration. The specific nature of the relationship requires more investigation, but this may be an indication that trading relationships can serve as an arena for successful

⁷⁶ In the sample of the analysis of abolition for all crimes, 47 of 145 countries exit at $t < 33$.

abolitionist pressure in the same way as political organisations like the Council of Europe have been found to do. *Integration in the world economy* has not been found to significantly influence the risk of abolition *for ordinary crimes*.

No evidence is found to support the theories that various sources of social threat make abolition of the death penalty less likely. The effect of *economic inequality* fails to reach statistical significance. It must be noted, however, that although this analysis utilises the most comprehensive version of the Gini coefficient that is available, problems with missing data are serious. *Ethnolinguistic fractionalisation* also does not significantly affect the risk of abolition. *Religious fractionalisation*, on the other hand, is estimated to significantly influence the risk of abolition of the death penalty *for all crimes* in one model. However, greater fractionalisation is estimated to *raise* the risk of abolition, with an increase of one standard deviation (around 24 points) raising the hazard rate by 60 to 110 percent. This is contrary to the expectations of social threat theory. However, it is not one of the most robust findings. The model in which the effect of religious fractionalisation is statistically significant is based on a small and not necessarily representative sample.

6.5. Summary

Table 7 presents a summary of the findings.

Table 7: Summary of findings

	Effect on abolition of the death penalty for all crimes / for ordinary crimes
Political factors	
Democracy	+
Democratic transition	+
Left-wing executive	+
Centrist executive	n.s. / +
Peace years	-+ / n.s.
Council of Europe	+
Regional abolition	+
Cultural factors	
Islam	n.s.
Common law	-+ / n.s.
Socio-economic factors	
Level of economic development	n.s.
Human development	n.s.
Integration in world economy	+ / n.s.
Economic inequality	n.s.
Ethnoling. fractionalisation	n.s.
Religious fractionalisation	n.s.

n.s.: not significant

-+: non-linear effect that changes from negative to positive

The results reveal that political factors are the most important in explaining abolition of the death penalty. Higher levels of democracy, a democratic transition, a left-wing or centrist executive in power, and abolitionist pressure through membership in the Council of Europe and via regional peers all increase the risk of abolition of the death penalty. Years passing without involvement in armed conflict raise the risk of abolition, but only if some time already has gone by since the conflict. Among the cultural factors, a legal system based on English common law lowers the risk of abolition early on in the period, but this effect wanes over time and in fact turns positive towards the end of the observation period. The share of Muslims in the population, on the other hand, proves to be unrelated to abolition when other factors are taken into account. The only socio-economic factor that influences abolition is how integrated a country is in the international economy. Countries that are more dependent on economic relations with others have a higher risk of abolition than economically more isolated countries. The analysis provides no evidence that the level of development – economic or human – influences abolition of the death penalty, nor does it provide support for social threat theories.

Abolition of the death penalty has been operationalised in two different ways, which allows for inferences about differing effects of variables for different forms of abolition. Four of the variables appear to influence abolition of the death penalty *for all crimes* and abolition *for ordinary crimes* differently. The political orientation of the executive influences abolition in both its forms, but in somewhat different manners. Left-wing executives are found to be more prone towards abolition of the death penalty in both forms, compared to right-wing executives. Centrist executives, on the other hand, appear to behave similarly to retentionist right-wing executives when it comes to abolition *for all crimes*, but behave more like the abolitionist left in terms of abolition *for ordinary crimes*. As such, they may be regarded as *centrist* not only on the traditional political spectrum, but also in terms of abolition of the death penalty. Three (sets of) variables significantly influence abolition of the death penalty *for all crimes*, but are unrelated to abolition *for ordinary crimes*: *peace years*, a legal system based on English *common law*, and *integration in the world economy*. The effect of a recent experience with war is expected to lead to greater reluctance to abolish the death penalty in time of war or in war-like situations, and thus to lower the risk of abolition *for all crimes*. Thus it makes sense that *peace years* influences abolition *for all crimes* but not *for ordinary crimes*. In general, however, theories regarding determinants of death penalty abolition do

not distinguish between abolition *for all* or *for ordinary crimes*, and thus there are no apparent theoretical explanations as to why *common law* and *integration in the world economy* might influence abolition differently in its two forms. The fact that these two variables, like *peace years*, do in fact influence abolition for all crimes, but not for ordinary crimes, may therefore be seen as an indication that the theories “fit” abolition of the death penalty *for all crimes* best. Countries that abolish the death penalty *for ordinary crimes* may, in terms of their experience with war, legal system, and trade reliance, not differ from retentionist countries to the same extent that countries that abolish the death penalty *for all crimes* do.

7. Conclusion

The aim of this thesis has been to study the determinants of death penalty abolition. The issue of the use and disuse of capital punishment stirs great controversy both internationally and nationally in many countries. Yet very little research has been presented on factors that promote or prevent abolition. This thesis is therefore intended as one step towards filling this gap in the knowledge about a matter that for some is a question of life and death, and for so many others is an issue that stirs strong emotions and opinions.

7.1. Building an analysis of abolition of the death penalty

This thesis has presented a range of hypotheses, representing political, cultural and socio-economic factors that were expected to influence the likelihood of abolition. These hypotheses have been tested through the application of event history analysis. This form of analysis is ideally suited for studying the determinants of abolition. It models both the duration until abolition and its occurrence or non-occurrence, under the assumption that countries with a higher likelihood of abolition will do away with capital punishment quicker than countries with a lower likelihood, which may not abolish the death penalty at all. Previous research on the use and disuse of capital punishment has mostly relied on modelling a dichotomous dependent variable, for instance through logistic regression models. These models distinguish between abolitionist and retentionist countries at one point in time. The independent variables are observed at that point, not at the time of abolition, and can therefore not serve as grounds for inferences about the determinants of abolition. Studies of the determinants that distinguish between countries that have abolished the death penalty and those that have not are certainly very valuable. However, as most of this research, like this thesis, seem to be motivated by an interest in the underlying causes of the abolition process, a model that allows for inferences about the determinants of abolition per se represents a significant improvement.

The operationalisation of the variables has also been presented. The event under study, abolition of the death penalty, has been operationalised in two different ways. Countries may abolish the death penalty *for all crimes*, or they may do away with capital punishment for so-called *ordinary crimes*, while retaining it for extra-ordinary crimes, such as war-time crimes. The determinants of both types of abolition have been analysed, and the results indicate that

the choice of operationalisation does influence the inferences made. Most previous research (with the exception of Neumayer (2008b)) has not differentiated between different forms of abolition, and the dual operationalisation of this thesis therefore represents an important improvement over the bulk of the existing research.

Most of the independent variables have been operationalised in a relatively straightforward and conventional manner. Some of the variables that have been included in analyses of abolition or of presence versus absence of the death penalty before, however, have been coded in new ways, and I have argued that these changes represent significant improvements. Furthermore, some of the variables introduced have not been included in analyses of the death penalty before, bringing new and very interesting results to the field of research.

7.2. Findings

The results show that political factors are the most important in explaining abolition of the death penalty. While all of the political factors significantly influence abolition, only one cultural (common law) and one socio-economic factor (integration in the world economy) are found to be related to the likelihood of abolition. This is not very surprising, really, as the political factors are causally closer to abolition than the cultural and socio-economic factors. The decision whether or not to abolish the death penalty is a political decision, and is therefore likely to be highly influenced by characteristics of the political system.

Furthermore, the results indicate that the determinants of abolition of the death penalty for all crimes may differ somewhat from the determinants of abolition for ordinary crimes. It appears that centrist executives may behave like the retentionist right in terms of opposing abolition of the death penalty *for all crimes*, but that they are similar to the abolitionist left when abolition *for ordinary crimes* is considered. This conclusion, however, is based on relatively small samples that differ to some extent in terms of the countries they cover, and is therefore very tentative. Furthermore, while a country's experience with armed conflict, a legal system based on English common law, and its integration in the world economy significantly affect its likelihood to abolish the death penalty *for all crimes*, these effects are not significant when the definition of abolition is expanded to include abolition of the death penalty *for ordinary crimes*. This may indicate that countries that abolish capital punishment

for ordinary crimes are not as different from retentionist countries as those that abolish the death penalty *for all crimes* are, at least not in terms of these three characteristics.

7.2.1. The findings held up to previous research

Some of the findings in this thesis are in line with previous research, and provide further support for relationships that have already been established. Neumayer (2008b) concluded that political factors are the most important in explaining abolition, and that the effects of cultural and socio-economic effects only receive limited support. This finding is supported in this analysis.

New independent variables

However, the analysis also brings new and interesting results to the fairly unexplored field of abolition studies. Some of the variables whose effects are explored have previously not been included in quantitative analyses of death penalty abolition. While the effects of human development and religious fractionalisation have not been tested before, the results indicate that neither is a determinant of death penalty abolition. Integration in the world economy has also not been included in an analysis of abolition of the death penalty, and appears to significantly raise the likelihood of abolition of the death penalty for all crimes. This may be an indication that abolitionist pressure can be successfully exerted through other channels than the political and regional relations that have previously been explored. It therefore represents a new and very interesting development.

New findings due to new operationalisations

Other variables, while not new to analyses of death penalty abolition, have for various reasons been operationalised in a new and hopefully more efficient manner. For two of these (*democratic transition* and *Council of Europe*) the results are similar to those from previous research. For three other (sets of) variables, on the other hand, the new operationalisations yield new results that indicate that the relationships between these factors and abolition of the death penalty may not be as simple as previous research has suggested. Firstly, the introduction of a separate measure of centrist executives has resulted in a very interesting indication that these may in fact in some cases be just as prone towards abolition as left-wing executives are. Previous research has grouped centrist along with right-wing executives, and has therefore only been able to conclude that left-wing executives are more likely to abolish the death penalty than centrist and right-wing executives. Secondly, the introduction of a

squared measure of peace years has revealed that a country's experience with war does influence its proclivity to abolish the death penalty, although it does so in a more complicated manner than was expected. Previous research that only included a simple measure of peace years was unable to detect this relationship. Finally, the introduction of an interaction term between *common law* and analysis time allows the effect of a legal system based on English common law to vary with time. While previous research has established a negative relationship between common law and death penalty abolition, the initial negative relationship now appears to wane with time and in fact turns negative towards the end of the observation period.

7.3. *Implications of findings*

As mentioned before, this analysis is not based on a random sample of all countries in the world, and therefore one cannot safely generalise the results outside the sample of observed countries and years. Nevertheless, it seems likely that the relationships that have been demonstrated in this sample may at least bear some resemblance to relationships that exist in other countries and at other times. Thus, while keeping the statistical limitations of the analysis in mind, the next section will briefly explore how the findings of this thesis may have consequences for politicians and activists concerned about the use of capital punishment, whether they advocate abolition or retention.

For someone seeking abolition, the results indicate that efforts to encourage the development of democracy will also increase the chances of abolition. Furthermore, it is clear that democratic transitions serve as an excellent opportunity for abolitionist advances, as the likelihood of abolition is many times larger at such times than it is otherwise. The results indicate that left-wing and to a certain degree centrist executives are more prone to favour abolition, and that abolitionist initiatives perhaps should be timed accordingly. It also seems as if moves towards abolition will be more likely to succeed in countries that have a long history of peace. Furthermore, the results point directly to three venues for abolitionist pressure that are shown to be effective: Countries that are exposed to abolitionist pressure through membership in the Council of Europe, through their regional relations or via their international trade relations are more likely to abolish the death penalty than countries under less such pressure.

Of course, politicians and activists seeking to retain the death penalty can find guidance in the same results. Where abolitionists may see opportunities for a successful abolitionist advance, retentionists may see a corresponding increase in the danger of abolition, and adjust their actions accordingly. For instance, someone intent on retaining the death penalty would probably not benefit from the development of democracy. Furthermore, the results indicate that right-wing executives may be more likely to favour retention, and thus that opponents of abolition may find it in their interest to help such a government into power. Finally, as the analysis indicates that abolitionist pressure through various channels can be effective, someone seeking to retain the death penalty would perhaps look for ways to protect the country from such pressure, for instance by isolating the country economically. However, it is not clear whether economic isolation in general would lower the risk of abolition, or whether trade only raises the likelihood of abolition when it makes a retentionist country dependent on an *abolitionist* one. This is one of the many questions that this analysis has *not* been able to answer, and which would benefit from further research.

7.4. Suggestions for further research

Building on the experiences from previous research on abolition and the presence or absence of the death penalty, the results of this thesis provide further support for a range of relationships that have already been established. The introduction of variables that have not previously been used in this field of research, along with the new and improved operationalisation of others, has led to new and very interesting findings in the study of death penalty abolition. These would benefit from the attention of future researchers. For instance, the results suggest that a country's experience with war influences its likelihood to abolish the death penalty in a non-linear manner, and that the effect of a legal system based on English common law varies over time. It is beyond the scope of this thesis to investigate the nature of these relationships to any large extent, and it is certainly likely that this analysis has not modelled them optimally. Thus, the effects of a country's experience with war and its legal heritage, along with the reasons for these relationships, need further studying. Furthermore, the finding that international trade relationships may serve as arenas for successful abolitionist pressure is new, and as suggested above, requires more attention. Are countries that are more dependent on international trade more likely to abolish the death penalty because they are exposed to overt abolitionist pressure, because they are exposed to the ideas of others in general, or does something else altogether explain this relationship?

A more general subject that requires further attention is the determinants of abolition *for all crimes* versus abolition *for ordinary crimes*. The results of this thesis indicate that the two forms of abolition may be partly explained by different factors. Firstly, the results suggest that centrist executives may be in line with left-wing executives in terms of favouring abolition of the death penalty for ordinary crimes, while behaving more like the retentionist right-wing executives when it comes to retaining the death penalty for extra-ordinary circumstances. This conclusion, however, is very tentative, as it is based on relatively small samples, and on samples that differ somewhat in terms of the countries they consist of. Use of more case-oriented methods might shed light on the behaviour of governments of different political leanings. Furthermore, while a country's experience with armed conflicts, a legal system based on English common law, and its integration in the world economy all effect abolition *for all crimes*, they do not contribute significantly to the explanation when abolition *for ordinary crimes* is also considered. Further research into this is needed to rule out that these very interesting results are the products of sample differences, and to explore the background for these differences.

Finally, there are of course factors that can be imagined to influence abolition that were not included in this analysis. One such example is the effect that religious fundamentalism may have on abolition. Jacobs and Carmichael (2004) argue that religious fundamentalists in the United States are less likely to favour abolition, and it would be very interesting to test whether religious fundamentalism lowers the likelihood of abolition in a cross-national sample. Could such an effect perhaps be part of the explanation why the United States, by retaining the death penalty, is grouped alongside countries with which it normally does not like to be compared, like Iran?

Among possible determinants of abolition that have been left out of this analysis, the most striking is probably a measure of violent crime. Since deterrence is one of the most frequently quoted arguments for use of capital punishment, it is not unreasonable to expect countries with high homicide rates to be less likely to abolish the death penalty (Neumayer 2008b). Neumayer (2008b) finds evidence for such a relationship, but due to data availability this result is based on a small sample. According to Marshall and Block (2004), the quality of international homicide data is seriously undermined by both definitional and procedural

problems. The problem of data availability has been worsened by the fact that Interpol, previously one of the main sources of such data, stopped publishing them in 2006, and removed old data from their website. A measure of homicide rates is not included in this analysis due to data availability. It will be very interesting to see if future research will be able to include better data on violent crime, and thereby contribute to our knowledge on the relationship between crime and abolition of the death penalty.

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Appendices

Appendix A: Tests run on the data

Tests of the proportional hazards assumption

Table 8: Schoenfeld tests, run on original models

	Abolition for all crimes				Abolition for ordinary crimes			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Democracy	-0.122 1.43	-0.096 0.85	-0.079 0.46	0.080 0.10	-0.161 3.05•	-0.133 2.35	-0.257 4.69*	-0.096 0.34
Democratic transition	0.133 1.26	0.110 0.76	0.131 1.15	-0.097 0.48	0.250 4.64*	0.225 3.39•	0.268 4.03*	-0.067 0.14
Left-wing executive				-0.041 0.06				-0.050 0.10
Centrist executive				0.143 1.37				0.162 1.98
Peace years	-0.021 0.04	0.017 0.02	-0.031 0.05	-0.044 0.13	0.076 0.42	0.230 3.97*	0.259 4.58*	0.090 0.24
Peace years squared	0.037 0.13	-0.004 0.00		0.029 0.05	-0.036 0.11	-0.175 2.57		
Council of Europe	0.079 0.44	0.086 0.51	0.008 0.00	0.002 0.00	0.064 0.25	0.196 3.30•	0.180 1.87	0.081 0.42
Regional abolition	0.081 0.16	0.022 0.01	0.029 0.01	-0.006 0.00	-0.029 0.04	0.032 0.03	-0.270 3.19•	0.124 0.53
Islam	-0.231 5.17*	-0.201 3.67•	-0.079 0.13	-0.149 0.51	-0.138 1.75	-0.226 6.41*	-0.055 0.23	-0.106 0.56
Common law	0.326 10.19**	0.333 11.28***	0.256 1.41	0.287 4.79*	0.196 3.48•	0.260 9.18**	0.134 1.66	0.104 0.41
Logged GDP pc		0.268 2.95•	0.351 2.85•			-0.100 0.34	0.168 1.00	
Human development				0.036 0.10				-0.037 0.06
Logged trade		-0.262 2.71•	-0.075 0.15	0.036 0.04		-0.269 6.41*	-0.225 2.44	0.147 0.99
Gini			0.133 0.60				0.222 1.30	
Ethnoling. fractionalisation	0.225 3.32•	0.310 7.10**	0.184 1.62	0.066 0.39	0.050 0.13	0.103 0.76	-0.028 0.05	0.011 0.00
Religious fractionalisation	-0.201 2.97•	-0.156 1.76	0.094 0.26	-0.144 1.49	-0.283 6.88**	-0.245 7.04**	-0.205 4.19*	-0.078 0.20
Global test	15.11	18.64•	8.36	7.84	12.03	18.99•	13.08	5.59

Top numbers in each cell are rho-values, chi squared below.

Significance: *** p<.001 ** p<.01 * p<.05 •p<.10

Other tests

Cleves et al. (2004: 175) recommend that *linktests* are performed on all models to check whether the included independent variables have been specified correctly. In all models but two the alternative specification does not present a significant improvement (at a five percent level or lower). The exceptions are models three and four in the analysis of abolition of the death penalty for ordinary crimes, both of which are based on small samples. Running the analysis from model two (where the linktest is insignificant) on the sample from model three generates a significant linktest. This indicates that the problems of model three are based in the (small) sample rather than in the variable that is introduced in this model. This is, however, not the case for model four. It appears that the problem here is related to the inclusion of the dummies for *left-wing* and *centrist executive*. As the effects of left-wing and centrist executives are both positive and undistinguishable in size, combining them could be an option. If these two dummies in fact are combined in one variable, the linktest is no longer significant at a five percent level. The two variables are nevertheless included separately in the analysis and the presented results, since combining them would not be valid in the analysis of abolition for all crimes.

STATA is unable to run residual based tests to check for observations with a disproportionate influence on the estimated parameters, due to the large number of observations in the analyses.

Appendix B: Data

The datasets

Table 9: Countries included in the datasets

	Analyses of abolition <i>for all crimes</i>	Analyses of abolition <i>for ordinary crimes</i>
Countries included in analyses.	Afghanistan, <i>Albania</i> , Algeria, Angola , <i>Argentina</i> , Armenia , Australia , Austria , Azerbaijan , Bahrain, Bangladesh, Belarus, Belgium , Benin, Bhutan , <i>Bolivia</i> , Bosnia-Herzegovina , Botswana, <i>Brazil</i> , Bulgaria , Burkina Faso, Burundi, Central African Republic, Cambodia , Cameroon, Canada , Chad, <i>Chile</i> , China, Comoros, Congo (Democratic Republic), Congo (Republic), Cote d'Ivoire , Cuba, Cyprus , Denmark , Djibouti , Dominican Republic , Egypt, <i>El Salvador</i> , Equatorial Guinea, Eritrea, Estonia , Ethiopia, <i>Fiji</i> , Finland , France , Gabon, Gambia, Georgia , Ghana, Greece , Guatemala, Guinea, Guinea-Bissau , Guyana, Haiti , Hungary , India, Indonesia, Iran, Iraq, Ireland , <i>Israel</i> , Italy , Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea (North), Korea (South), Kuwait, Kyrgyzstan, Laos, <i>Latvia</i> , Lebanon, Lesotho, Liberia, Libya, Lithuania , Macedonia , Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius , <i>Mexico</i> , Moldova , Mongolia, Morocco, Mozambique , Myanmar, Namibia , Nepal , Netherlands , New Zealand , Nicaragua , Niger, Nigeria, Norway , Oman, Pakistan, Papua New Guinea, Paraguay , <i>Peru</i> , Philippines, Poland , Portugal , Qatar, Romania , Russia, Rwanda, Saudi Arabia, Senegal , Sierra Leone, Singapore, Somalia, South Africa , Spain , Sri Lanka, Sudan, Swaziland, Sweden , Switzerland , Syria, Tajikistan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey , Turkmenistan , United Arab Emirates, United Kingdom , United States, Uganda, Ukraine , Uzbekistan, Vietnam, Yemen, Zambia, Zimbabwe	Afghanistan, <i>Albania</i> , Algeria, Angola , <i>Argentina</i> , Armenia , Australia , Azerbaijan , Bahrain, Bangladesh, Belarus, Belgium , Benin, Bhutan , <i>Bolivia</i> , Bosnia-Herzegovina , Botswana, <i>Brazil</i> , Bulgaria , Burkina Faso, Burundi, Central African Republic, Cambodia , Cameroon, Canada , Chad, <i>Chile</i> , China, Comoros, Congo (Democratic Republic), Congo (Republic), Cote d'Ivoire , Cuba, Cyprus , Djibouti , Dominican Republic , Egypt, <i>El Salvador</i> , Equatorial Guinea, Eritrea, Estonia , Ethiopia, <i>Fiji</i> , France , Gabon, Gambia, Georgia , Ghana, Greece , Guatemala, Guinea, Guinea-Bissau , Guyana, Haiti , Hungary , India, Indonesia, Iran, Iraq, Ireland , Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea (North), Korea (South), Kuwait, Kyrgyzstan, Laos, <i>Latvia</i> , Lebanon, Lesotho, Liberia, Libya, Lithuania , Macedonia , Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius , Moldova , Mongolia, Morocco, Mozambique , Myanmar, Namibia , Nepal , New Zealand , Nicaragua , Niger, Nigeria, Oman, Pakistan, Papua New Guinea, Paraguay , <i>Peru</i> , Philippines, Poland , Qatar, Romania , Russia, Rwanda, Saudi Arabia, Senegal , Sierra Leone, Singapore, Somalia, South Africa , Spain , Sri Lanka, Sudan, Swaziland, Syria, Tajikistan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey , Turkmenistan , United Arab Emirates, United Kingdom , United States, Uganda, Ukraine , Uzbekistan, Vietnam, Yemen, Zambia, Zimbabwe
Font indicates death penalty status as of end of 2004:		
Regular:		
Retentionist		
Bold:		
Abolitionist for all crimes		
<i>Italic:</i>		
Abolitionist for ordinary crimes		
Countries omitted from sample because they abolished before 1960 or before independence	Colombia ^a , Costa Rica ^a , Croatia ^b , Czech Republic ^b , Ecuador ^a , Honduras ^a , Germany ^d , Iceland ^a , Panama ^a , Slovakia ^b , Slovenia ^b , Solomon Islands ^c , Uruguay ^a , Venezuela ^a	Austria ^a , Colombia ^a , Costa Rica ^a , Croatia ^b , Czech Republic ^b , Denmark ^a , Ecuador ^a , Finland ^a , Germany ^d , Honduras ^a , Iceland ^a , Israel ^a , Italy ^a , Mexico ^a , Netherlands ^a , Norway ^a , Panama ^a , Portugal ^a , Slovakia ^b , Slovenia ^b , Solomon Islands ^c , Sweden ^a , Switzerland ^a , Uruguay ^a , Venezuela ^a

^a: Death penalty was abolished before 1960. ^b: Abolition occurred while country was part of a federation that has now been dissolved. ^c: Abolition occurred before independence. ^d: Western Germany abolished the death penalty before uniting with Eastern Germany.

Operationalisation of independent variables

Table 10: Sources and description of variables included in analyses

Variable	Source	Comments
<i>Democracy</i>	Polity IV Project, version pv42004 (Marshall et al. 2007), variable <i>polity2</i> .	Range: -10 to +10
<i>Democratic transition</i>	Polity IV Project, version pv42004 (Marshall et al. 2007), variable <i>regtrans</i> .	Ordinal variable <i>regtrans</i> recoded into dummy.
<i>Left-wing executive and centrist executive</i>	The World Bank's <i>Database of Political Institutions</i> (Beck et al. 2007), variable <i>execrlc</i> .	Ordinal variable <i>execrlc</i> recoded into dummy. Only available 1975-2004.
<i>Peace years</i>	UCDP/PRIO's (2007) <i>Armed Conflict Dataset</i> , variable <i>location</i> .	<i>Peace years</i> counts the running number of years since the country was recorded by the variable <i>location</i> as being involved in an armed conflict.
<i>Council of Europe</i>	Council of Europe (2008) web pages.	Dummy variable that measures exposure to abolitionist pressure via membership from 1983 and onwards.
<i>Regional abolition</i>	Amnesty International (2008a; 2008b; 2008c), Hood (2002).	Share of abolitionist countries in region, adjusted for share of abolitionist countries worldwide in that year. Two versions of variable, based on different definitions of abolition.
<i>Islam</i>	CIA's (2007) <i>World Factbook</i> .	Numeric variable, percentage Muslims in population. Time non-varying.
<i>Common law</i>	La Porta et al. (1999).	Dummy variable.
<i>Level of economic development</i>	World Bank's (2007) <i>GDP per capita</i> , constant 2000 US dollars.	Logged.
<i>Human development</i>	United Nations Development Programme (2007), <i>human development index</i> (HDI).	Recoded to range from 0 to 100. Interpolated. Only available 1975-2004.
<i>Integration in world economy</i>	World Bank's (2007) variable <i>trade</i> .	Logged.
<i>Economic inequality</i>	Giskemo's (2008) <i>Gini coefficient</i> , based on data from UNU-WIDER (2008).	Range: 0-100. Interpolated.
<i>Ethnolinguistic fractionalisation</i>	Alesina et al. (2003), variables <i>ethnic</i> and <i>language</i> .	Averaged index based on two variables from Alesina et al. Recoded to range from 0 to 100.
<i>Religious fractionalisation</i>	Alesina et al. (2003), variable <i>religion</i> .	Recoded to range from 0 to 100.

The following section provides further details on the creation of some of the independent variables, where this is needed for informed judgements about their coding.

Democratic transition

The dummy variable identifying democratic transitions is based on the variable *regtrans* from the Polity IV Project (Marshall et al. 2007). *Regtrans* has the following categories (Marshall and Jaggers 2005: 34-35):

- +3 Major Democratic Transition – six points or greater increase in *polity* score over a period of three years or less including a shift from an autocratic *polity* value (-10 to 0) to a partial democratic *polity* value (+1 to +6) or full democratic *polity* value (+7 to +10) or a shift from a partial democratic value to a full democratic value.
- +2 Minor Democratic Transition – three to five point increase in *polity* score over a period of three years or less including a shift from autocratic to partial democratic or from partial to full democratic value (see definitions above).
- +1 Positive Regime Change – three or more point increase in *polity* score without a shift in regime type as defined above.
- 0 Little or No Change in polity score.
- 1 Negative Regime Change – three to five point decrease in *polity* score.
- 2 Adverse Regime Transition – six or more point decrease in *polity* score or an interregal period (-77) denoting a collapse of central state authority or a revolutionary transformation in the mode of governance (not a democratic transition).
- 77 State failure – complete collapse of central political authority.

In addition to these categories, around 87 percent of the country-years are coded as system missing, but as all of these refer to country-years when there was no change in the *polity*-score from last year (with the exception of two country-years, when there was a one-point change since the previous year), these were recoded into category zero (little or no change).

A dummy variable identifying *democratic transitions* equals one when *regtrans* equals two or three, and zero for all other values.

Political orientation of the executive

Two dummy variables identifying country-years with a *left-wing* or *centrist executive* were created, based on the variable *execrlc* from The World Bank's *Database of Political Institutions* (Beck et al. 2007). *Execrlc* categorises the party of the chief executive as either *right*, *left* or *center* (placing parties that do not fit into this categorisation in a *no information*-category, and countries in the middle of a civil war or political crisis into a *no executive*-category). The categorisation is based on the party names as given in *Political Handbook of*

the World and the *Europa Year Book*. “Conservative” or “Christian democratic” parties are classified as right-wing, while parties are classified as left-wing if their names show that they are communist, socialist, or social democratic, or if the sources label them as left-wing. Parties are classified as centrist if the sources call them centrist or if they are deemed best described as centrist. If needed this information was supplemented by Agora Telematic’s website, and with *Political Parties of Africa and the Middle East* and *Political Parties of Eastern Europe and the Successor States*, the last two published by Longman Current Affairs series. If there was a conflict among these sources, the description of the party economic platform was given priority (Keefer 2005; Beck, Clarke, Groff, Keefer, and Walsh 2000).

Left-wing executive is coded one if *ecexlrc* classifies the party of the executive as leftist, zero if the party is classified as rightist or centrist, and missing if the party does not fit the categorisation or if there is no executive. *Centrist executive* is coded one if *ecexlrc* classifies the party of the executive as centrist, zero if the party is classified as leftist or rightist, and missing if the party does not fit the categorisation or if there is no executive. This leaves right-wing executives as the reference category.

Following Neumayer (2008b) and Greenberg and West (2008), it is recognised that the category of left-wing executives covers a very wide variety of regimes, as for instance Norway under Stoltenberg receives the same classification as North-Korea under Kim Jong Il. Also recognising that socialist one-party states are not particularly likely to abolish the death penalty, the analyses have been rerun with such countries omitted from the category of left-wing executives. This is discussed in the section on sensitivity tests in Appendix E. It appears that the results are not substantially affected by the inclusion of socialist one-party states among left-wing executives.

Peace years

The variable *peace years* counts the number of years since a country has been involved in an armed conflict, as recorded by the *Armed Conflict Dataset* from the International Peace Research Institute, Oslo and the Department of Peace and Conflict Research at Uppsala University (UCDP and PRIO 2007).

An armed conflict is defined as “[...] a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths” (Harbom et al. 2006: 4). The UCDP/PRIO variable *location* is the basis for coding *peace years*. *Location* refers to the country/countries whose government(s) have a primary claim to the object in dispute (Harbom et al. 2006), and thus it identifies countries that are involved in the conflict in such a manner that they will feel threatened to the extent that it is relevant in the context of the theories regarding abolition of the death penalty.

The *Armed Conflict Dataset* covers the period from 1946 to 2005. If a country has existed (in its present form) since before this period, and is not registered as being involved in an armed conflict from 1946 to 1960, *peace years* gets the value 15 for 1960. (1945 is the last time at which it may have been at war: $1960 - 1945 = 15$.) For new countries, on the other hand, that is countries that have *not* existed since before 1946, *peace years* disregards information on conflicts that occurred before the country arose in its present form. For instance, a newly independent state is seen as separate from the former colony. This means that *peace years* starts at one from the year of independence (given that there was no armed conflict in this year, and that independence occurred after 1960).

Council of Europe

The variable *Council of Europe* is coded in the following manner:

Member country, year \geq 1983:	<i>Council of Europe</i> = 1
Member country, year < 1983:	<i>Council of Europe</i> = 0
Non-members:	<i>Council of Europe</i> = 0

Regional abolition

The variable *regional abolition* measures the share of abolitionist countries in the region, adjusted for the share of abolitionist countries world wide. *Regional abolition* is made up by the following elements:⁷⁷

$$\frac{(\text{No. of abolitionist countries in region } r \text{ in year } y) / (\text{No. of countries in region } r \text{ in year } y)}{(\text{No. of abolitionist countries in world in year } y) / (\text{No. of countries in world in year } y)}$$

Two versions of the variable were created, so that *regional abolition* measures the share of countries that are abolitionist *for all crimes* in the analyses of the determinants of abolition *for all crimes*. Equivalently it measures the share of countries that are abolitionist *for ordinary crimes* in analyses of abolition *for ordinary crimes*.

Economic inequality

The Gini coefficient is used as the measure for *income inequality*. The Gini coefficient is a measure of how the total income of a society is distributed among its members, and varies between 0 and 100, with higher values denoting a higher degree of inequality. The calculation of the Gini coefficient can be illustrated in the following way:

Figure 3: Calculation of the Gini coefficient

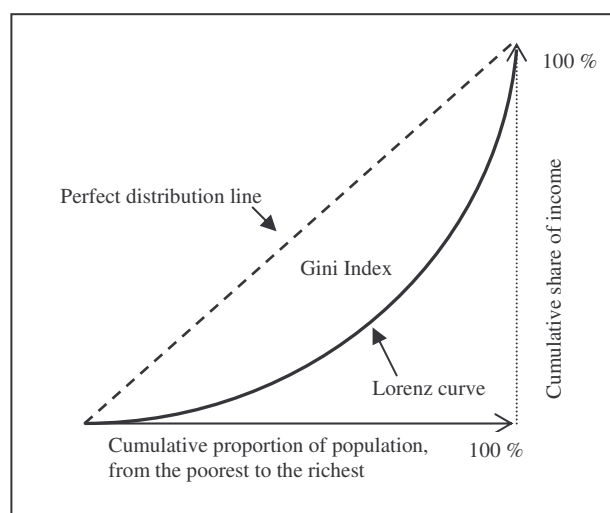


Figure 3 is an adaptation of the figure on page 17 in UNU-WIDER (2007).

⁷⁷ The number of countries in a region or in the world in a specific year refers to the number of countries in that region or worldwide *that are included in my dataset* for that year.

The horizontal axis measures the cumulative proportion of the population, from the poorest to the richest. The vertical axis measures the cumulative proportion of income associated with the corresponding units on the horizontal axis. In a society with perfect equality, the Lorenz curve would fall on the 45 degree line. When incomes vary within the population, the Lorenz curve may look like the thick line in Figure 3. As inequality rises, the curve moves towards the bottom right corner. The Gini coefficient corresponds to the area between the 45 degree line and the Lorenz curve, divided by the total area below the 45 degree line (UNU-WIDER 2007: 17).

The Gini coefficient is provided by Giskemo (2008). Her variable is based on data from the World Income Inequality Database (WIID, version 2b). The WIID compiles data collected by the World Institute for Development Economics Research at the United Nations University (UNU-WIDER). The WIID data build on a very wide range of sources, and thus the data differ on aspects such as the population covered, unit of analysis, weights, and income definition, and the dataset includes multiple observations for many country-years. All of this is documented in the database, however, enabling researchers to utilise the data in an informed manner.

Giskemo has reduced the dataset to only single observations based on a set of prioritising rules regarding definition of income, unit of analysis and weighting system, and data sources. These rules are based partly on conceptual and theoretical considerations, and partly on data availability. Most importantly, Giskemo prefers disposable income over other income definitions, except for developing countries, where consumption/expenditure data are preferred, and person-weighted household is the preferred unit of analysis. For the detailed set of rules, see Appendix D in Giskemo (2008). The variable has been interpolated to minimise problems with missing values.

Ethnolinguistic and religious fractionalisation

The variables *ethnolinguistic* and *religious fractionalisation* refer to the probability that two randomly selected individuals from the population of a country will belong to different groups. Higher values thus denote greater fractionalisation. The variables are based on three fractionalisation measures provided by Alesina et al. (2003), based on ethnicity, language and religion. Due to strong correlation between the measures of ethnic and linguistic

fractionalisation, an averaged index for *ethnolinguistic fractionalisation* was created based on the two. The following formula is used to compute the original measures:

$$FRACT = 1 - \sum_{i=1}^N s_{ij}^2 ,$$

where s_{ij} is the share of group i in country j (Alesina et al. 2003). The variables were recoded to range from 0 to 100 to ease interpretation.

Alesina et al.'s (2003) measure of *ethnic fractionalisation* is based on information from *Encyclopedia Britannica*, CIA's *World Factbook*, Levinson's *Ethnic Groups Worldwide*, *A Ready Reference Handbook*, Minority Rights Group International's *World Directory of Minorities*, and four national censuses. The information was collected in different years in different countries, from 1979 to 2001, with 1993 as the median. Their measure of *linguistic fractionalisation* is based on 2001-data from *Encyclopedia Britannica*, which reports the shares of languages spoken as mother tongues, generally based on national census data. *Religious fractionalisation* is also based on 2001-data from *Encyclopedia Britannica* (Alesina et al. 2003). The data have been used for the entire period covered in my analyses.

Appendix C: Bivariate analyses and correlations

Table 11: Bivariate analyses of abolition of the death penalty for all crimes

Independent variable	Hazard ratio		Robust standard error	Z	Number of subjects	events	years at risk
Democracy	1.136	***	.026	5.64	145	49	4931
Democratic transition	6.730	***	2.639	4.86	145	49	4931
Left-wing executive	1.604		.588	1.29	101	33	1784
Centrist executive	.848		.466	-0.30	101	33	1784
Peace years	1.027	*	.011	2.57	145	49	4931
Council of Europe	14.870	***	4.951	8.11	145	49	4931
Regional abolition	1.760	***	.162	6.13	145	49	4931
Islam	.983	**	.006	-2.94	145	49	4931
Common law	.500	*	.171	-2.02	145	49	4931
Level of economic dev.	1.423	***	.127	3.97	138	48	4197
Human development	1.046	**	.014	3.30	124	37	2654
Integration in world ec.	1.833	**	.428	2.60	142	47	4189
Economic inequality	.925	***	.018	-4.06	110	32	2162
Ethnoling. fractionalisation	.985	**	.006	-2.71	145	49	4931
Religious fractionalisation	1.000		.005	0.09	145	49	4931

Standard errors are robust. Efron method is used to handle ties.

Significance: *** p<.001 ** p<.01 * p<.05. All tests are two-tailed.

Table 12: Bivariate analyses of abolition of the death penalty for ordinary crimes

Independent variable	Hazard ratio		Robust standard error	Z	Number of subjects	events	years at risk
Democracy	1.149	***	.026	6.26	134	49	4391
Democratic transition	9.920	***	3.153	7.22	134	49	4391
Left-wing executive	.581		.204	-1.55	90	33	1458
Centrist executive	2.549	*	1.190	2.01	90	33	1458
Peace years	1.024	*	.011	2.23	134	49	4391
Council of Europe	21.883	***	7.640	8.84	134	49	4391
Regional abolition	2.460	***	.269	8.24	134	49	4391
Islam	.982	**	.005	-3.26	134	49	4391
Common law	.553		.191	-1.71	134	49	4391
Level of economic dev.	1.377	**	.127	3.48	127	48	3659
Human development	1.042	***	.012	3.50	114	38	2283
Integration in world ec.	1.405		.362	1.32	130	47	3664
Economic inequality	.975		.018	-1.38	98	32	1782
Ethnoling. fractionalisation	.987	*	.005	-2.51	134	49	4391
Religious fractionalisation	1.001		.005	0.24	134	49	4391

Standard errors are robust. Efron method is used to handle ties.

Significance: *** p<.001 ** p<.01 * p<.05. All tests are two-tailed.

Table 13: Pairwise correlations

Sample: Ab. for all crimes	Dem.	Dem. trans.	Left-w. exec.	Centr. exec.	Peace years	Counc. of Eur.	Reg. ab.	Islam	Common law	Ec.dev.	Hum. dev.	Int. in world ec.	Gini	Ethnoling. frac.	Rel. frac.
Democracy	1.00														
Dem. trans.	0.10	1.00													
Left-wing exec.	-0.45	0.01	1.00												
Centrist exec.	0.21	-0.05	-0.35	1.00											
Peace years	0.13	0.02	0.07	-0.08	1.00										
Council of Eur.	0.29	-0.01	-0.14	0.03	0.15	1.00									
Regional ab.	0.27	0.06	-0.30	0.11	0.12	0.30	1.00								
Islam	-0.34	-0.03	0.21	-0.03	-0.24	-0.08	-0.33	1.00							
Common law	0.25	-0.03	-0.13	-0.02	-0.04	-0.05	-0.15	-0.09	1.00						
Economic dev.	0.41	-0.04	-0.30	0.00	0.32	0.23	0.28	-0.19	0.02	1.00					
Human dev.	0.46	-0.03	-0.27	0.07	0.28	0.34	0.42	-0.26	0.06	0.89	1.00				
Int. in world ec.	0.01	-0.04	0.01	0.04	0.15	0.08	-0.11	0.09	0.16	0.13	0.16	1.00			
Economic ineq.	-0.20	0.06	-0.06	-0.04	-0.08	-0.21	0.09	0.03	0.08	-0.26	-0.36	-0.00	1.00		
Ethnoling. frac.	-0.19	-0.01	0.14	-0.02	-0.21	-0.15	-0.28	0.15	0.18	-0.48	-0.52	0.04	0.36	1.00	
Religious frac.	0.13	-0.03	-0.09	-0.07	0.05	-0.06	-0.09	-0.45	0.30	-0.02	-0.03	0.08	0.06	0.25	1.00
Sample: Ab. for ordinary crimes	Dem.	Dem. trans.	Left-w. exec.	Centr. exec.	Peace years	Counc. of Eur.	Reg. ab.	Islam	Common law	Ec.dev.	Hum. dev.	Int. in world ec.	Gini	Ethnoling. frac.	Rel. frac.
Democracy	1.00														
Dem. trans.	0.14	1.00													
Left-wing exec.	-0.47	-0.01	1.00												
Centrist exec.	0.22	-0.04	-0.36	1.00											
Peace years	0.08	0.04	0.02	-0.11	1.00										
Council of Eur.	0.25	0.01	-0.19	0.04	0.13	1.00									
Regional ab.	0.35	0.08	-0.38	0.09	0.10	0.26	1.00								
Islam	-0.28	-0.03	0.20	-0.01	-0.22	-0.05	-0.27	1.00							
Common law	0.29	-0.03	-0.14	0.02	-0.02	-0.09	-0.08	-0.11	1.00						
Economic dev.	0.27	-0.03	-0.34	-0.02	0.30	0.16	0.37	-0.09	0.03	1.00					
Human dev.	0.33	-0.01	-0.30	0.07	0.26	0.27	0.42	-0.16	0.06	0.86	1.00				
Int. in world ec.	0.00	-0.05	0.00	0.08	0.21	0.09	-0.09	0.08	0.13	0.16	0.24	1.00			
Economic ineq.	-0.12	0.03	-0.05	-0.05	-0.11	-0.15	0.03	0.02	0.17	-0.16	-0.32	0.10	1.00		
Ethnoling. frac.	-0.12	-0.01	0.12	0.01	-0.21	-0.11	-0.31	0.10	0.17	-0.44	-0.52	0.02	0.38	1.00	
Religious frac.	0.14	-0.02	-0.11	-0.05	0.04	-0.09	-0.14	-0.50	0.28	-0.03	-0.04	0.06	0.13	0.25	1.00

Correlation coefficients. Pairwise correlations are run on the largest samples from the two sets of multivariate analyses.

Appendix D: Interaction terms

Table 14: Percentage change in hazard from one additional peace year

1 year added at:	Abolition for all crimes		
	Model 1	Model 2	Model 4
0 peace years	-6.2	-7.7	-11.7
10 peace years	-3.2	-4.1	-6.1
20 peace years	-.1	-.3	-.1
22 peace years	.5	.4	1.1
32 peace years	3.7	4.4	7.5
42 peace years	6.9	8.5	14.3
52 peace years	10.3	12.7	21.5
58 peace years	12.4	15.3	26.0
(max observed is 59 years)			
Function changes direction at	21.0 years	21.4 years	20.7 years

HR (*peace years* + *c*, *peace years*) = $\exp [\beta_1 c + \beta_2 (2 * \textit{peace years} * c + c^2)]$, where β_1 is the coefficient for *peace years*, β_2 is the coefficient for *peace years squared*, and *c* is the difference for which you are calculating the hazard ratios, in this case one year (Hosmer and Lemeshow 1999: 136).

Table 15: Percentage change in hazard from *common law* at various points in time

Analysis time	Abolition for all crimes		
	Model 1	Model 2	Model 4
$t = 1$	-96.9	-96.7	-99.7
$t = 11$	-90.8	-91.1	-98.1
$t = 22$	-69.5	-73.3	-84.9
$t = 32$	-9.4	-27.4	-.6
$t = 33$	1.0	-19.8	20.1
$t = 45$	272.8	166.1	1056.6
(max)			
Function changes direction at $t =$	32.9	35.2	32.03

HR (*common law* = 1, *common law* = 0) at analysis time $t = \exp [\beta_1 + \beta_2(t)]$, where β_1 is the coefficient for *common law* and β_2 is the coefficient for *common law*analysis time* (Hosmer and Lemeshow 1999: 135).

Appendix E: Sensitivity tests

Table 16 and Table 17 present the results of the main analyses rerun on a sample that includes countries that abolished before 1960 or before independence. These countries are coded as having abolished the death penalty in their first year of observation.

Table 16: Abolition of the death penalty for all crimes, extended sample

Independent variables	Model 1	Model 2	Model 3	Model 4
Democracy	1.100*** (.028)	1.092** (.033)	1.102 (.066)	1.113* (.051)
Democratic transition	6.435*** (2.775)	5.382** (2.722)	9.607*** (5.667)	3.947* (2.194)
Left-wing executive				3.354** (1.236)
Centrist executive				1.215 (.809)
Peace years	.944 (.028)	.936* (.031)	1.030* (.014)	.909* (.042)
Peace years squared	1.001* (.001)	1.002* (.001)		1.002* (.001)
Council of Europe	4.844*** (1.801)	3.118** (1.216)	3.737* (2.114)	2.908** (1.235)
Regional abolition	1.499*** (.138)	1.649*** (.172)	1.435* (.208)	1.911** (.384)
Islam	.992 (.006)	.998 (.007)	.993 (.012)	.974* (.012)
Common law	.094 (.116)	.029* (.046)	.495 (.202)	.044*** (.035)
Common law*analysis time	1.078 (.046)	1.108* (.058)		1.159*** (.046)
Level of economic development		.967 (.118)	1.055 (.184)	
Human development				.981 (.017)
Integration in world economy		2.890*** (.787)	2.439** (.826)	2.02* (.659)
Economic inequality			.983 (.023)	
Ethnoling. fractionalisation	1.004 (.007)	.998 (.008)	.995 (.010)	1.001 (.011)
Religious fractionalisation	1.002 (.008)	1.005 (.008)	1.027** (.009)	1.013 (.010)
Period covered	1960-2004	1960-2004	1960-2004	1975-2004
Number of country-years	4944	4028	2034	1437
Number of countries	158	147	109	94
Number of abolitions	62	57	33	36
Log-likelihood	-224.16	-191.48	-80.69	-102.13
Wald chi2	160.63	144.17	123.38	74.59
Prob > chi2	0.000	0.000	0.000	0.000

Hazard ratios, with robust standard errors in parentheses. Efron method is used to handle ties. Significance: *** p<.001 ** p<.01 * p<.05. All tests are two-tailed.

Table 17: Abolition of the death penalty for ordinary crimes, extended sample

Independent variables	Model 1	Model 2	Model 3	Model 4
Democracy	1.082** (.030)	1.070* (.032)	1.130* (.056)	1.042 (.037)
Democratic transition	5.780*** (2.152)	5.671*** (2.245)	11.451*** (4.414)	3.898** (1.972)
Left-wing executive				3.147** (1.074)
Centrist executive				4.265** (1.843)
Peace years	.980 (.028)	.983 (.031)	1.021 (.015)	.999 (.010)
Peace years squared	1.000 (.001)	1.000 (.001)		
Council of Europe	5.298*** (1.871)	4.210*** (1.671)	7.721** (4.718)	5.797*** (2.335)
Regional abolition	1.753*** (.227)	1.907*** (.320)	1.766** (.385)	1.987** (.490)
Islam	.984* (.006)	.991 (.006)	.983* (.008)	.985** (.005)
Common law	.506 (.177)	.258* (.170)	.537 (.286)	.493 (.191)
Common law*analysis time		1.028 (.025)		
Level of economic development		.918 (.129)	.842 (.149)	
Human development				1.017 (.019)
Integration in world economy		1.636 (.437)	1.366 (.468)	.760 (.212)
Economic inequality			1.015 (.020)	
Ethnoling. fractionalisation	1.001 (.007)	.998 (.008)	1.006 (.009)	1.008 (.010)
Religious fractionalisation	1.002 (.007)	1.003 (.008)	1.019 (.014)	1.009 (.009)
Period covered	1960-2004	1960-2004	1960-2004	1975-2004
Number of country-years	4415	3516	1659	1123
Number of countries	158	146	97	92
Number of abolitions	73	68	34	46
Log-likelihood	-262.24	-230.37	-74.61	-127.30
Wald chi2	199.12	169.45	155.37	95.66
Prob > chi2	0.000	0.000	0.000	0.000

Hazard ratios, with robust standard errors in parentheses. Efron method is used to handle ties.
Significance: *** p<.001 ** p<.01 * p<.05. All tests are two-tailed.

Alternative operationalisations

The following section presents the re-estimations that have been run to test for alternative operationalisations of independent variables.

To allow for the possibility that the effect of a variable may in fact not be linear, but rather only take place after some threshold is reached, all continuous variables have been transformed into dummies indicating values above or below the mean and median of that variable. Each of these dummies has been included in re-estimations of the analyses of Table 4 and Table 5. None of the dummies appear to be preferable over its continuous counterpart. Other possible thresholds that have been tested is the effect of a majority of Muslims in the population, and more than 21 *peace years* (the point at which the effect of an additional peace year turns from negative to positive in the analyses of Table 4). Neither appear as an improvement of the existing measure.

A few other re-estimations have also been performed to test for alternative operationalisations. Recognising that socialist one-party states are not particularly likely to abolish the death penalty, these countries have been excluded from the category of *left-wing executives*.⁷⁸ In the analysis of abolition of the death penalty for all crimes the results are not affected, but when abolition is defined as for ordinary crimes, the effect of a *left-wing executive* increases somewhat in size when socialist one-party states are excluded from the definition of a left-wing executive (hazard ratio of 3.8, significant at the one percent level). This is not surprising given that the removal of communist one-party states is believed to result in a group of left-wing executives that is more homogenous in terms of attitudes and policies favouring abolition.

The measure of *ethnolinguistic fractionalisation* was replaced by each of the two measures on which it is based, *ethnic* and *linguistic fractionalisation*. Like the index, however, neither significantly influences the hazard of abolition in any of the models. The analyses were also run with La Porta et al.'s (1999) measure of ethnolinguistic fractionalisation, which did not prove to be an improvement.

⁷⁸ Socialist one-party states were set to missing in both *left-wing executive* and *centrist executive*. CIA's *World Factbook* provided information on the periods covered by the socialist regimes (Central Intelligence Agency 2007).